50 CENTS

Textile World

MARCH, 1956

What Chemicals Do To 8 Fibers

- Acetate
- Dacron
- Nylon
- Orlon
- Rayon
- Cotton
- Silk
- Wool

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Manufacturing Chemists

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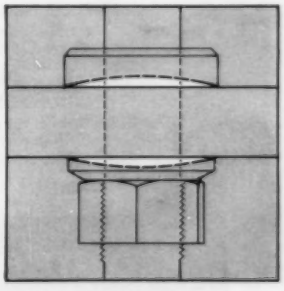

Concave collar and washer design makes "plumbing" easier and faster.

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WEST POINT, GEORGIA

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Developments To Watch

STRETCH YARNS . . . made of cotton and wool may become a big factor in the hosiery business. Already, stretch socks knitted from wool and cotton twisted with nylon stretch yarn are on the market; but the development that really should be watched is cotton and wool yarns made stretchy by chemical treatment. Promising samples have already been made.

100%-COTTON DRESS SHIRTS . . . that don't have to be ironed are on the way. They've already hit Europe (France, Germany, Scandinavia, etc.). Our eye witness–Steve Rudo of Werner Textile Consultants–tells us that he saw shirts that had been laundered more than 20 times being worn even with tuxedos.

The shirts have two disadvantages: you can't boil 'em, and you can't wring 'em in a washer. Price is only slightly higher than the iron-'em kind.

The noniron quality comes from crushproofing treatment. [See "Cotton Crushproofing," TW, Dec, '55, p. 102.]

MOTHPROOF WOOL . . . straight from the sheep's back is in the development stage, according to the Wool Bureau.

VINYLON . . . made from modified polyvinyl alcohol is Japan's answer to a synthetic fiber that can be made from readily accessible materials. Although somewhat sensitive to wet heat, Vinylon is strong and abrasion resistant; it is said to produce garments that are warm in winter and cool in summer.

METALLIZED FABRICS . . . are being produced in Germany by electrolytic evaporation of metals in a high vacuum. The vapors condense on the fabric to form a porous deposit that has insulating value. Decorative effects are possible, and electrical conductivity tests are promising.

BETTER SEAMLESS HOSIERY . . . will result from a device fitted to circular hosiery machines that creates a suction inside the cylinder. Air rushing between the cylinder and dial gives better control of the fabric and prevents unsightly tuck stitches and uneven fabric, especially in the welt part of the stocking.

CASTOR-OIL FIBER . . . may make headway as a textile material in Japan. Raw materials are castor oil, coal, and petroleum. Compared with nylon, the new fiber is said to dye easier, resist heat better, and is lighter weight.

PAPER FABRICS . . . that are resistant to water and yet air permeable are soon to be on the market. Raincoats may be sold in drugstores like cellulose tissues and discarded when the rain stops.

NEW RUSSIAN LOOMS . . . will be in the blueprint stage in 1956. These looms include a mechanism to feed the filling from stationary bobbins. But textile mills don't like the looms and don't want them; they say the looms are too slow. The looms are also 25% larger than the looms they're replacing. If the looms are used, production will necessarily be cut back.

COTTON SURPLUS . . . may be reduced if paper mills buy low-grade surplus cotton. The paper industry could consume 100,000 bales per year if the cotton could be obtained at 12¢ per pound.

WOMEN'S STOCKINGS . . . will all be stretch types within five years, one mill man thinks. Maybe they won't resemble the present-day types because new yarns and new techniques are constantly being developed.

JAPANESE EXPORTS . . . of rayon and acetate spun-yarn fabrics will increase in 1956. Production of these fabrics in 1955 for export alone came to a whopping 521-million sq. yds.–an amount equal to 85% of estimated U.S. production for the period. For Japan, exports of synthetic fabrics in 1955 were 72% greater than in 1954. In filament fabrics alone, exports were 337-million sq. yds., approximately 39% of U.S. production. Where's all this production going in 1956? Without a workable imports-quota system, we'll soon find out.

PROFITS AFTER TAXES . . . are expected to be better in 1956 than in recent years. And it's about time. In 1954, the textile industry showed lower profit figures than any other industry except meat packing. Specifically, cotton earned 3.3%, silk and rayon 4.2%. Wool was 5.5% in the red.

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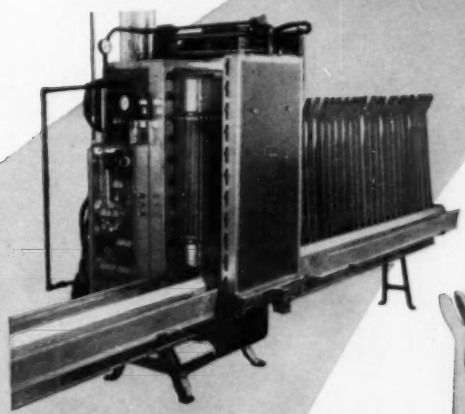
NOW... FOUR-CYCLE OPERATION

for complete control of finishing according to the after-dyeing method of plasticizing all types of hosiery or garments, stretch or conventional

... The Turbo ADS-48 ... The Turbo ADS-96



Turbo ADS-48 Combination Preboarder/Finish Boarder. There are 48 forms, 24 each on conveyor tracks to the right and left of the setting cabinet.

Turbo ADS-96, two-operator, double-track machine with 96 boarding forms.

The new Turbo ADS-48 and ADS-96 with four-cycle operation provide:

(1) timed preheating and preconditioning boards and fabrics to uniform temperatures and dryness for the control of excessive condensation.

(2) timed solenoid-controlled air expulsion allowing for top preboarding temperatures to be reached quickly at saturated steam table pressures, further reducing condensation. The higher pressures necessary for an air and steam mixture are avoided.

(3) timed temperature controlled steaming cycle can be shortened considerably, further checking excessive condensation.

(4) timed air drying cycle can be shortened because of minimum condensation. The cabinets are lined with finned heating coils. For still more efficient drying, a recirculating air preheating stack is optional equipment.

These new features for the control of temperature and condensation reduce bleeding and splotching due to hot water collecting on the boards . . . reduce steam consumption, reduce processing time . . . cut your finishing costs. Write for the "Four-Cycle" story today.

TURBO SINCE 1929

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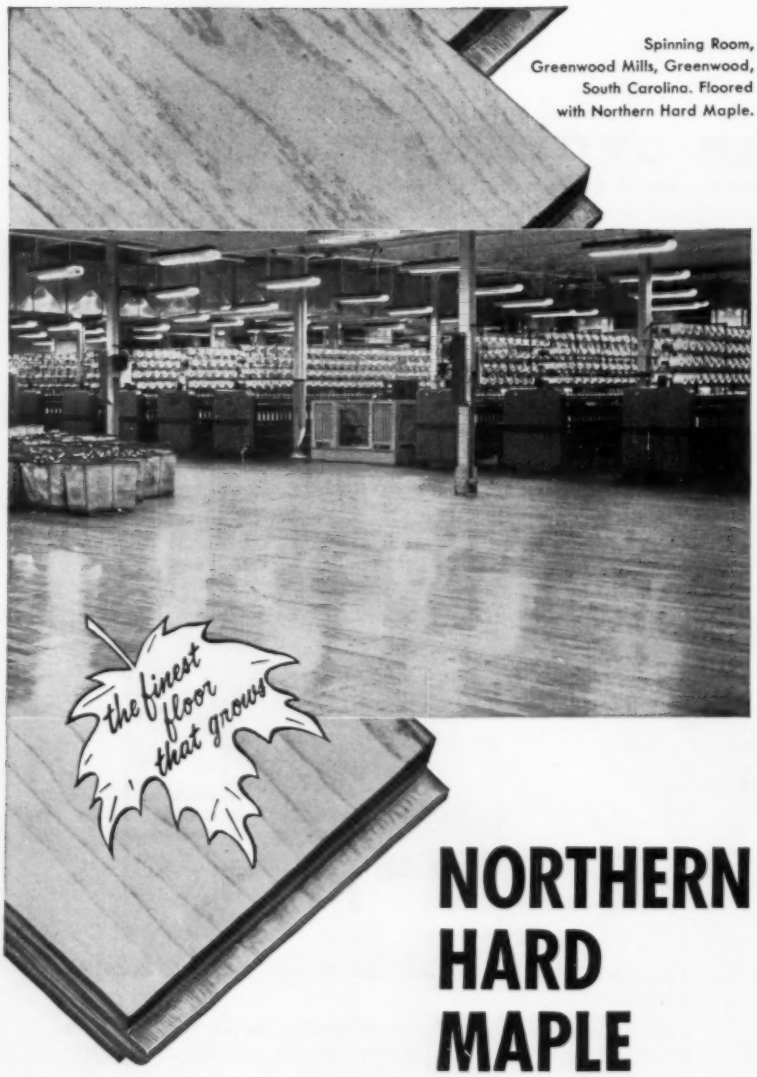

Spinning Room, Greenwood Mills, Greenwood, South Carolina. Floored with Northern Hard Maple.

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deservedly...first choice of the textile industry

Because it has *proved*, through the years, that it makes the best of all textile mill floors, Northern Hard Maple has sold *itself* to the industry, on its merits. Workers like its cheerful brightness and *resiliency* under foot. It's easy to brush clean, creates no dust, harbors no dirt, fights scuffs, scars and dents. It's easy to re-surface and it lasts for years. Even oil soaking doesn't affect its tough strength. Look for the MFMA mark on the underside. See Sweet's (13j-MA). Write for the new 1956 MFMA-endorsed list of floor finishing products.

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CHICAGO 1, ILLINOIS

FLOOR WITH NORTHERN HARD MAPLE
BEECH AND BIRCH

DEVELOPMENTS TO WATCH

250 NEW TEXTILE MILLS . . . will be built in the South by 1965, estimates the Southern Association of Science and Industry.

"WOOL CARPETING . . . properly tufted into a high-pile fabric to retail at $10.95 to $11.95 per sq. yd. will control a strong percentage of the carpet business in 1956," says Roy Sharwell, vice president, Crown Carpet Mills, and president, Crown Midwest Co., Inc. "Synthetic-fiber carpeting will continue strong; but there will be a decided switch toward wool, especially by young newly married couples," he adds.

COTTON RECAPTURES A MARKET . . . The Old King's slice of the men's dress-raincoat market jumped from 25% in 1954 to 60% in 1955—and 1956 looks even better. The losers were rayon and nylon.

SOLUTION-DYED YARNS . . . of rayon, acetate, and synthetics are becoming big factors in the production of draperies, upholstery, and dress goods. The effect on the dyeing business, as yet small, is bound to grow into a full-sized headache because no true dyeing process now known can equal the fastness characteristics of solution-dyed yarns at their best.

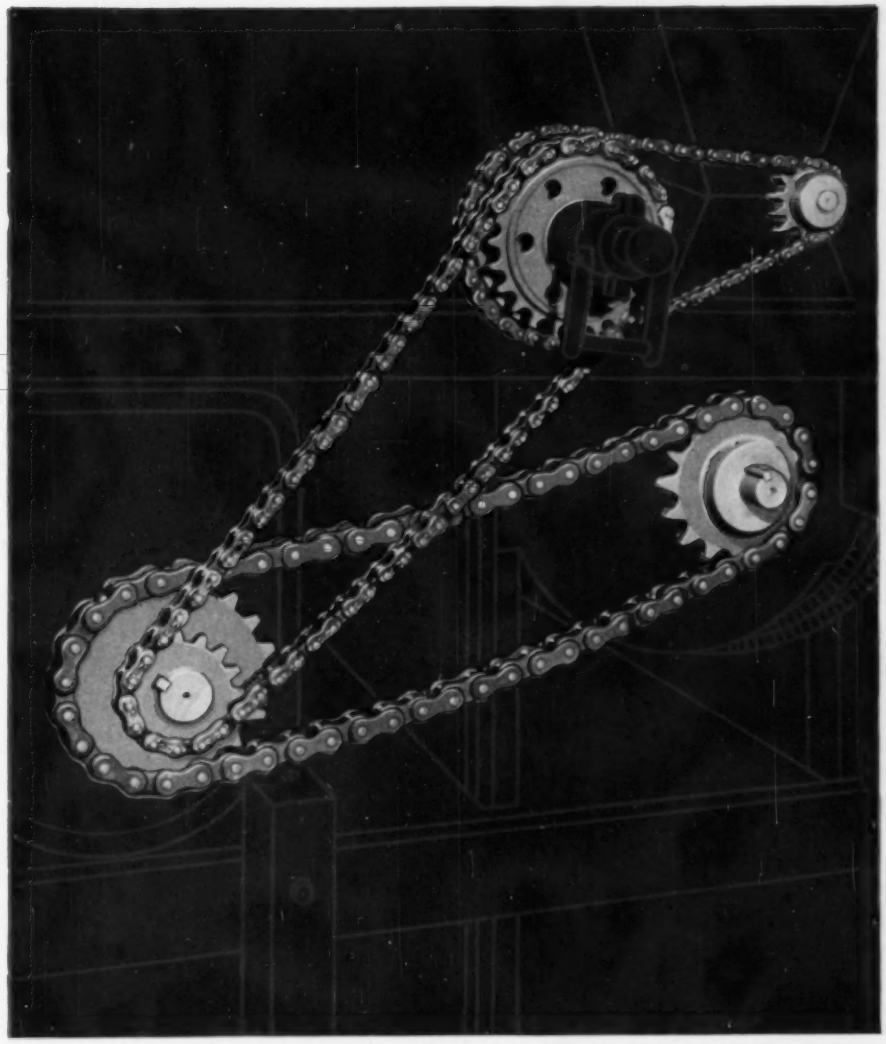
FULL-FASHIONED OUTERWEAR . . . gauges are likely to become finer. Most machines in use are 21 gauge, but more 24-gauge machines are being installed. This trend will not put coarser-gauge machines out of business, such as happened in the hosiery trade, but will increase the flexibility of outerwear knitters and create new styles.

HOSIERY-INDUSTRY COSTS . . . are expected to increase more than 2.4%, or $31-million, as a result of the $1-minimum wage. Hosiery sells today for less than it did five years ago, and profits are very small. Mills unable to adjust rapidly won't survive.

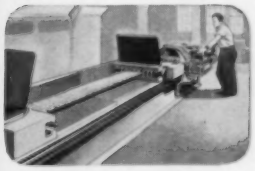
NYLON-CORD TIRES . . . shaped like a watermelon could revolutionize the bulk transportation of fuels and other liquids, according to Goodyear Tire & Rubber Co. Called Rolli-Tanker, the tank is an unconventionally shaped tire that can be rolled over uneven ground, floated in water, or dropped 15 ft. without bursting. One man can pull a 250-gal. unit.

For more information, write direct or use Reader-Service post card.

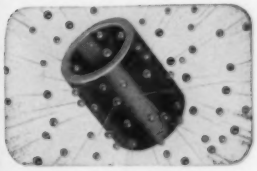
In roller chain . . . EXTRAS* like these give you extra reliability



LOCK-TYPE BUSHINGS (applied on a range of sizes) end a cause of stiff chain.



PRE-STRESSING of multiple width chain provides uniform load distribution.



SHOT-PEENED ROLLERS have greater fatigue life, added ability to withstand impact.

CLOSER HEAT-TREAT CONTROL — coupled with rigid testing insures uniformity.

*And you pay no premium for these LINK-BELT extras

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ROLLER CHAIN & SPROCKETS

19,702

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FOR QUALITY DYEING
WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS

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Letters From Readers

THE MEN MILLS LOSE: ONE DOWN . . .

Dear Editor:

Your editorial "The Men Mills Lose" [TW, Dec., '55, p. 85] was impressive. I am no longer in a mill because I got the sort of treatment you were talking about.

I worked under the thoughtless supervision of a man who had a third-grade education. He averaged drinking on the job at least once a week and was sometimes almost intoxicated. He always spoke with a great deal of profanity and sometimes flew into violent fits of rage, whether he was drunk or sober.

I have read articles in TEXTILE WORLD about this type of supervision, but few people who have never encountered it would believe that it is so bad. You probably wonder if the whole company is this way. The answer is no. The company has one of the best labor-relations programs of the entire industry. This supervisor is their only sore spot, as their personnel director has admitted.

I hope some day to get back into textiles and hold no grudge against the industry. I just wanted to give one person's reason for leaving.

G.W.H.

Greer, S. C.

. . . AND ONE TO GO

Dear Editor:

I found your December editorial very interesting because I am about to leave a mill where I have been poorly treated.

I have had the dubious distinction of working for the same company for over 30 years, starting at the age of 14. Most of those years have been spent in worsted carding. I've seen many men come and go and many

For more information, write direct or use Reader-Service post card.

ROBERTS AEROCREEL

CAN YOU RUN FULL ROVING PACKAGES IN YOUR SPINNING?
Photo shows 10 x 5 Double Roving on a 3¼" gauge Frame. Other Roberts AeroCreel designs available for 12 x 6 single and 10 x 5 Double on 2¾" gauge Frames and up.

- **FULLY OPEN BOBBIN HOLDER CREEL**
- **REDUCES CLEANING**
- **REDUCES CREELING TIME**
- **PERMITS FULL ROVING PACKAGES EVERYWHERE**

Drawn Aluminum Channels combine mounting for Bobbin Holder with Dust Cap (patents pending).

Rigid Creel construction due to solid steel Creel Posts, heavy cast iron Supports and extruded Channels.

Racks supplied for laying Roving on top of Frame; or they can be removed for fully open design when Roving Trucks are used.

Smoothly formed and finished to resist lint adherence. Air flows freely over and around elements.

Roberts Company makes everything in Spinning from Floor to Creel.

1. Modernization Material for your present Spinning Frames
2. Completely modernized Roberts Model 55R, High Draft Spinning
3. All new Model 56, Roberts Spinning Frames

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

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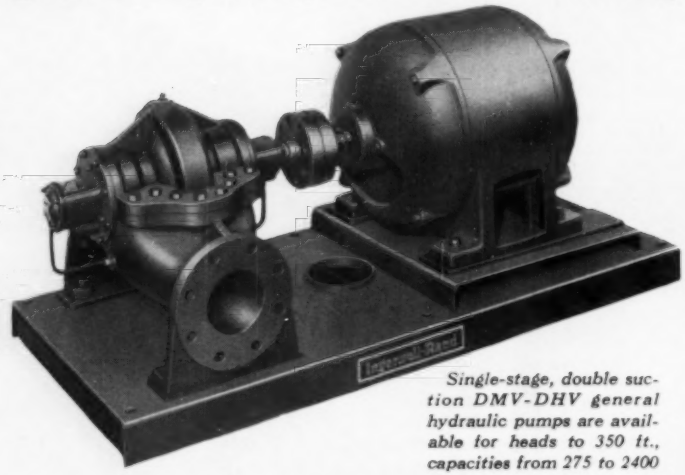
HERE'S EXTRA PROTECTION

against pump shaft leakage



Single-stage, double suction DMV-DHV general hydraulic pumps are available for heads to 350 ft., capacities from 275 to 2400 gpm.

Use of double mechanical shaft seals in

DMV-DHV PUMP LINE

ends stuffing box maintenance

This modern DMV-DHV pump *is different!* Gone are the conventional packed stuffing boxes—with their periodic tightening, repacking, and annoying shaft leakage.

Double Mechanical Shaft Seals are standard equipment. Self-adjusting, they require no attention throughout their entire service life. Leakage is effectively prevented.

NO BEARING LUBRICATION

Another advanced design feature of the DMV-DHV pump that helps eliminate maintenance problems is the use of Cartridge-Type Bearings. The lubricant is permanently sealed in. This means successful operation for many years —in tough installations—without any servicing.

Greater Compactness is obtained with this modern construction using mechanical shaft seals and sealed bearings.

Contact your nearest I-R branch office for full details. Or write for Bulletin 7248-A.

Ingersoll-Rand

10-289 Cameron Pump Division
11 Broadway, New York 4, N. Y.

PUMPS • CONDENSERS • TURBO-BLOWERS • COMPRESSORS • ROCK DRILLS
DIESEL & GAS ENGINES • AIR & ELECTRIC TOOLS

changes made in the course of 30 years. I could talk at length about why mills lose competent men.

I, for one, am not the man to quit easy. I have always had to work. I never had much education; so I always took whatever came along in stride, whether it was abuse from atrocious bossism or the neglect of management to see the good a man does to keep his department running smoothly and harmoniously.

I have been in a supervisory capacity for over 27 years, which shows that I was determined to improve myself and to delegate work rather than to be told what to do all my life. But I was unfortunate to have an overseer over me who was, as you said in your editorial, one of the family. He probably knew some phase of his job but really got along on sheer bluff and frightening gestures to put fear in your life. If you didn't do what you were told, whether it was right or wrong, you would be outside looking in.

Well, this went on for so long that about eight years ago I really called his bluff and quit; but the reason I gave for quitting was that I was going in business for myself and was getting out of mill work. Less than three months went by before he was sending feelers to see if I would reconsider and go back to my job again, but I sent word to him every time that I would never go back so long as he was the boss (even though I loved my work). But he wasn't satisfied with that; he was determined that he was going to get me back, and he finally made the approach in person.

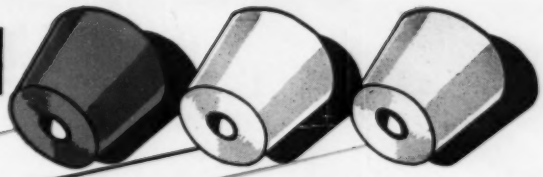
I really had my chance to tell him off, and he promised he would do everything to heal any hurt he had done to me. After almost two months of consideration, I decided I would go back. Believe me, I was greeted with open arms from all my help; but the whole department, machinery and all, was at a point of chaos. It took me another three months to get it all back to normal again, believing all the while that I had proved a point with management on the fact that it was me and not the overseer who kept the department going at peak efficiency.

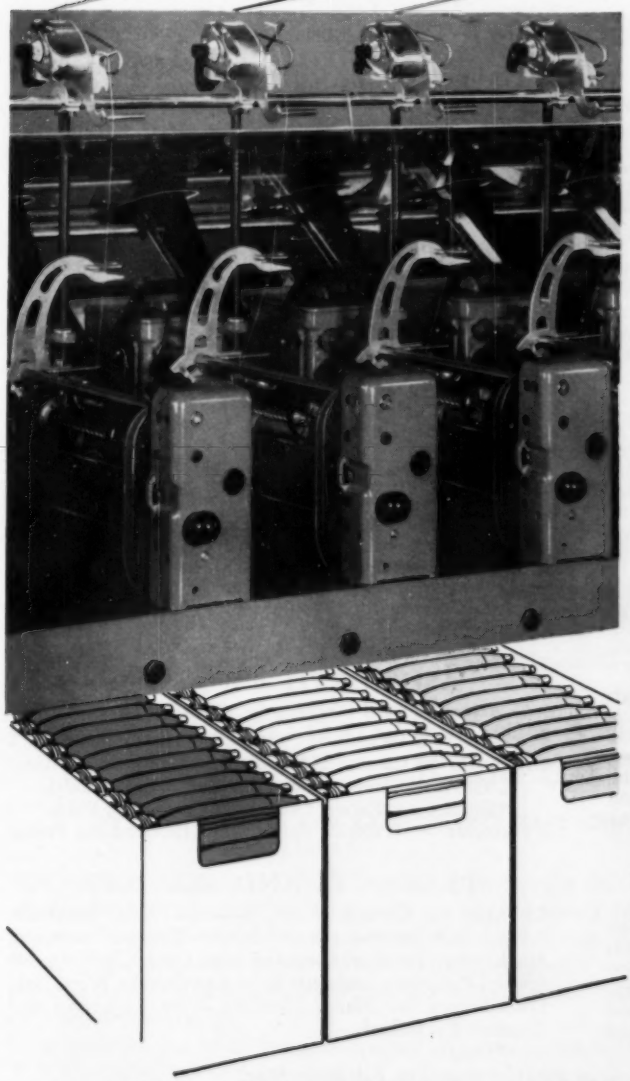
We got along fairly well for about three years, and then he gradually started to slip back to his old ways again. About this time, the company had to make a very important decision, and it boiled down to whether it was going to be him or me. Well, they made him go and I succeeded him as overseer.

Now, I agree with you that mills pay poor salaries. How true that is.

CONTINUED ON PAGE 186

AUTOCOPSER





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VERSATILE QUILLER

Textile Mills problem No. 1 in a buyers' market:

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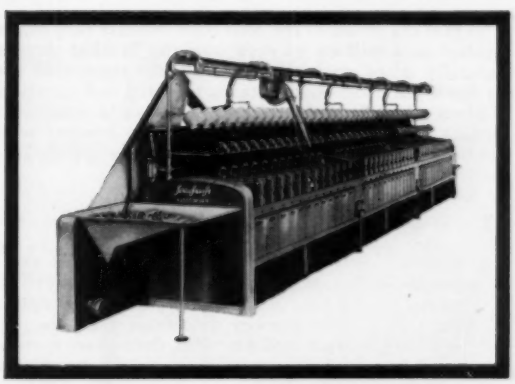
ONE HUNDRED STYLES TOMORROW . .

Only with the AUTOSCOPER in your quiller room can you follow the market trends at maximum efficiency, and lowest possible costs.

Write today to The Terrell Machine Co., Charlotte, N. C. for booklets explaining the outstanding features of the AUTOSCOPER!

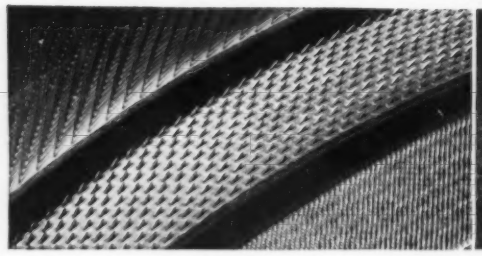


Schlafhorst

AUTOCOPSER

First Name in Automatic Quillers the World Over

SOLD AND SERVICED BY THE TERRELL MACHINE COMPANY, INC., 3000 S. BLVD., CHARLOTTE, N. C.



Ashworth Tips ON CARDING

No. 27 in a Series

SETTINGS ON WOOLEN & WORSTED CARDS

In woolen and worsted carding, the card is so constructed that the various rolls can be set or adjusted so as to suit the particular type of stock being processed at the time. The type stock being processed and its preparation before being presented to the card are the determining factors as to what the settings should be. In short, there are no *definite* rules to follow in the setting of a woolen or worsted card and a change of stock on a card may call for a complete change in settings to produce satisfactory roving.

I. Importance of Correct Settings

In setting the card two points should be noted.

a. Rolls set too closely can damage the card clothing and cause fibre breakage resulting in a loss of yield. The efficiency of the card clothing is lessened and grinding becomes necessary to restore the sharp point needed for good carding. This in turn can shorten the life of the card clothing.

b. Rolls set too far apart tend to produce neps, resulting in poor roving and defects in the finished cloth.

II. Graduation of Settings

So that the action of the rolls from breaker card through finisher card will be an even one, the breaker section is generally more open-set to handle the unopened stock. As the stock progresses through the card and parallelism of fibres takes place, the rolls are set closer to complete the carding job. Too close a setting on the breaker section can cause unnecessary damage to the card wire (by packing the stock) and eventual loss of pitch.

III. Settings that Call for Special Attention

a. *Tumbler and Angle Strippers.* These rolls are important in that they must transfer stock to the cylinders where the carding action takes place. Improper settings can cause uneven distribution of the stock, resulting in poor carding. Also, the surface speed and condition of the card clothing on the tumbler and angle stripper are important, for a little neglect results in the dropping or throwing of stock.

b. *Fancy.* Since the fancy is often called the most important roll on the card, proper settings are essential. Two points should be considered in the setting of the fancy.

1. Excessive speed, no matter how carefully the setting is made, will throw stock and create excessive fly or waste.

2. Insufficient speed can cause packing of the stock in the cylinder and eventual shelling out of the wire — due to wrapping of the stock around the fancy and the additional strain placed on the wire in trying to keep the cylinder clean.

CONCLUSION: There are no definite rules to follow in the setting of a woolen or worsted card, for the stock and its condition when presented to the card are the determining factors. Correct settings mean even roving and a greater efficiency for a longer period of time from the card clothing.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
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3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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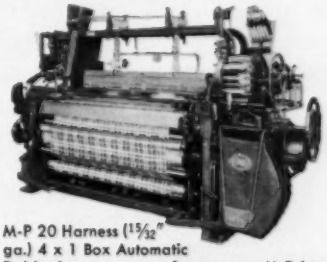
Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

You can "turn on a dime"... any time!... and SCORE... when you're backed up by C&K's New M-P Line

You're always a tough and ready competitor, when your weaveroom has the **M**ost **P**rotection you can give it . . . and that means these all-new **M**ulti-**P**urpose Looms. Every loom in this line is built on the same basic frame, and can be converted overnight to practically *any* fabric construction or color combination dictated by fashion . . . *from plain to fancy or back again.*

In addition, the **M-P** line makes other important contributions to **M**ill **P**rofits . . . better fabric quality . . . increased work assignments . . . increased production (speed x efficiency) . . . and lower maintenance. See C & K today.



M-P 20 Harness (15/32" ga.) 4 x 1 Box Automatic Dobby Loom . . . one of many new M-P Looms . . . *all built on the same basic frame*

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

CROMPTON & KNOWLES *Loom works*

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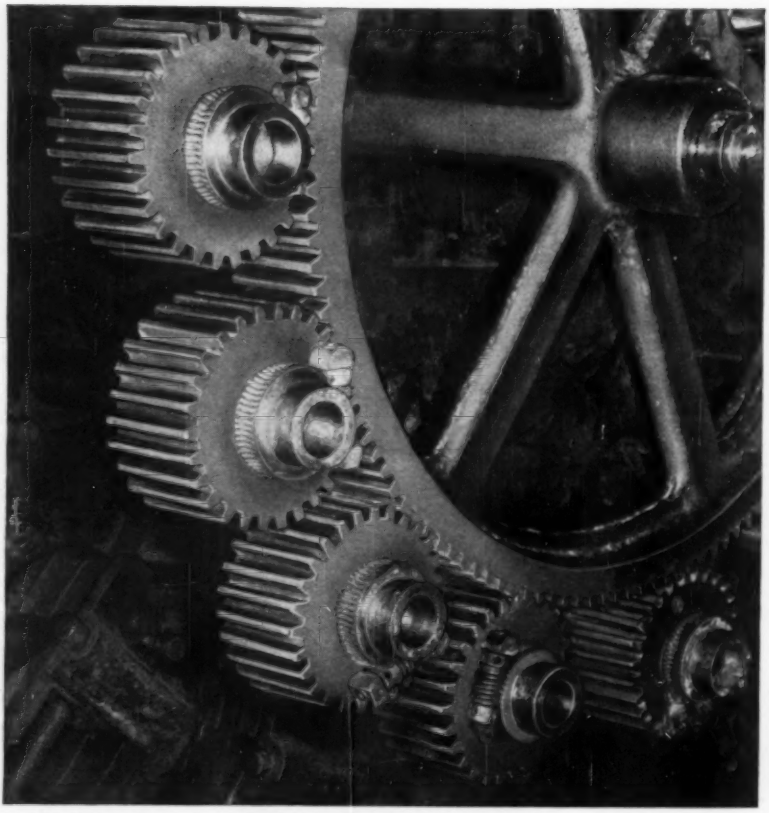
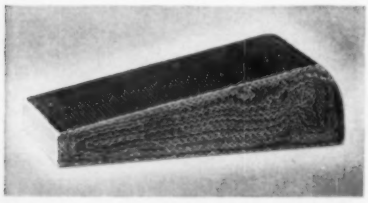


REDUCE WEAR on large metal gears and reduce noise in textile printing machines with the use of C-D-F Celoron plastic gears. Prior to this use of Celoron, metal gears had to be replaced after one to two months' operations. Since installing nine C-D-F Celoron gears over a year ago, there has been no wear on the main gear, no replacement of the C-D-F Celoron gears.

ELIMINATE CORROSION, resist wear with C-D-F Celoron pot-eyes for bleachery applications. This low-cost molded product is extremely smooth and strong, has excellent resistance to high heat, moisture, abrasion.



INCREASE MACHINE EFFICIENCY with special C-D-F loom parts. This C-D-F parallel plug has high impact strength, is impervious to oil and water. It does not fracture, chip, delaminate. Two years' life is common.

SAVE MATERIALS with superior C-D-F Roving Cans. For running synthetics, C-D-F makes a rolled fibre rim that eliminates static charge. No chance of snagging or injuring materials. New 15" diameter Diamond Fibre cans are now available!

LOWER mill operating COSTS by wider use of C-D-F plastics

Reduce wear and noise, eliminate corrosion, increase machine efficiency, save materials. That's what these four examples of C-D-F plastics can do for your mill. C-D-F is a leading manufacturer of vulcanized fibre, the long-life material that goes into Diamond Fibre Roving Cans which are famous for quality and their seamless uniformity. C-D-F has years of experience in selling the textile industry, has established its southern headquarters in Spartanburg, S. C. Reasonable prices, superior quality, fast service are part of every order placed with the friendly C-D-F textile sales engineer. If lowering mill operating costs is your responsibility, C-D-F . . . a big reliable source of supply . . . helps you with a complete line of textile industry plastics.

C-D-F MAKES

BARRELS
BEARINGS—cloth roll, jig
BOARDS—examining
BOBBINS
BLADES—separator
BOXES—battery filling
bobbin
conditioning
doff
mill
quill
spooler
tote
BUSHINGS—binder
CAMS
CANS—roving waste
COUPLINGS
COVERS
spinning bucket
GEARS—auxiliary
card
coiler head
fitting
motor pinion
quill
picker
spinner
spooler
GUIDES—knife
PICKER—stick parts
PINS—binder
PIRNS
PLATES—lay
PLUGS—parallel
POT—eyes
PULLEYS
RECEPTACLES
ROLLS—lap
ROLLERS
SEPARATORS
SHEETS—bin lining
SHUTTLE PARTS
TABS—binder
TRACK—tenter frame
TRUCKS—cloth
conditioning
doff
filling
quill
spinning
spooler
twisting
waste
winding
TUBES—core sizing
TUBING—spiral
WASHERS

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CALL C-D-F SPARTANBURG, Spartanburg 3-6397 for fast service, expert technical help.

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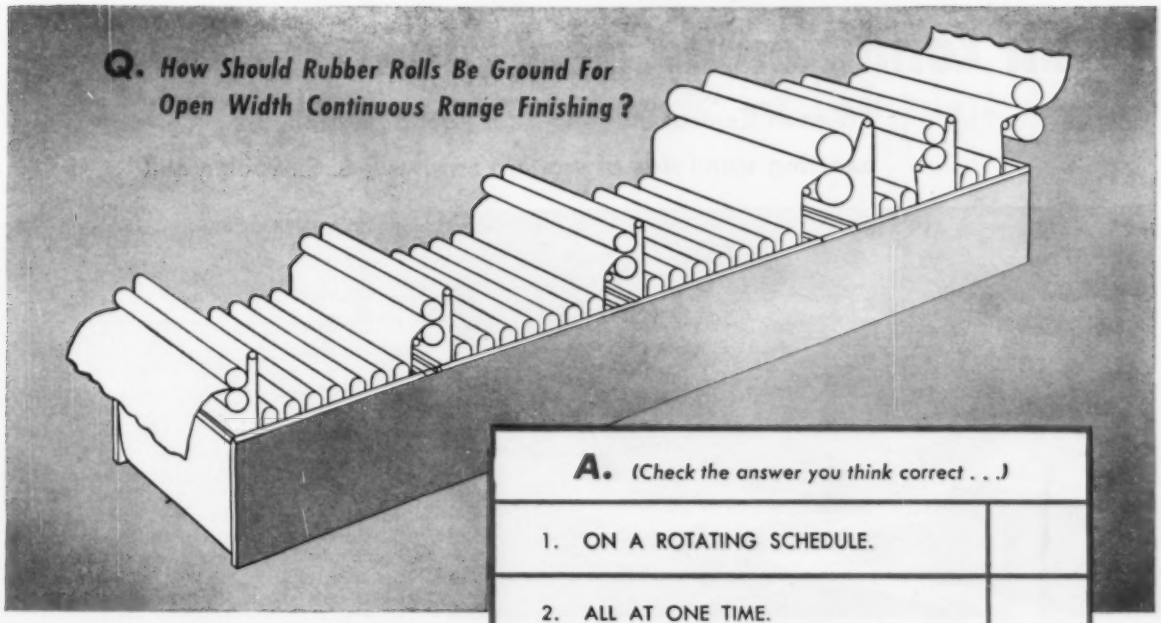
STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost

Q. *How Should Rubber Rolls Be Ground For Open Width Continuous Range Finishing?*



A. *(Check the answer you think correct . . .)*	
1. ON A ROTATING SCHEDULE.	
2. ALL AT ONE TIME.	
3. INDIVIDUALLY AS REQUIRED.	

You'll find the correct answer in these Maintenance Tips

Answer number 2 is probably the most correct of the three. In continuous bleachers and washers, where the goods are under tension from one pair of squeeze rolls to the next, grinding any of the driven squeeze rolls individually can upset the speed ratio between the different sets of rolls and cause too much or too little stretch in the goods. Actually, although it sounds expensive, grinding all of the rolls at one time is practical since speed and wear on these rolls is practically constant, and all should need regrinding at about the same time.

In the case of a deep cut or gouge in one of the rolls from some foreign element in the goods, it may be more economical to recover this one roll than to greatly reduce the rubber thickness of all of the rolls to correspond to that necessary to restore the surface of the damaged roll.

Your Stowe-Woodward Sales Engineer will be pleased to advise you on any problem regarding the care, selection or performance of rubber rolls.

"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

Amerotron Corp. cites Bahnson research in air conditioning new plant

Bahnson Central Station "Year-Round" System fits exacting standards of modern Barnwell, S. C. woolen Mill

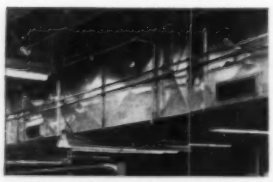
Amerotron Corporation's modern, integrated carded woolen mill recently completed at Barnwell, S. C.

Engineers & Architects: **Lockwood Greene, New York, N. Y.**
General Contractor: **Daniel Construction Co., Greenville, S. C.**

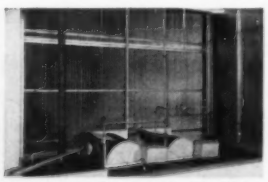
Air conditioning our new Barnwell, S. C. plant involved several principal considerations: our planned operating goals for this mill; Amerotron's special manufacturing processes; the modern design and construction of the plant; and our obligations to personnel and customers alike.

We feel that Bahnson's advanced engineering research and attention to our specific air conditioning requirements have successfully met those conditions. In our new plant, Bahnson's modern "Year Round" Central Station System contributes effectively to our aims for high quality production and operating efficiency.

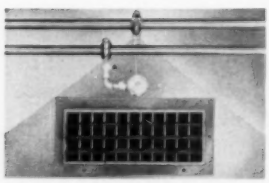
Amerotron Corporation



Modern Bahnson duct system, ceiling suspended, delivers saturated air under automatic control in proper proportion to the need. Custom designed, ductwork is quality built and securely connected for efficient air-handling. Bahnson type ESC Atomizers, mounted over discharge grilles, offer flexible supplementary humidification.



Bahnson Type B Suction Strainers in tank of Bahnson Type Y Air Washer automatically remove lint from re-circulated water and flush it away. Thus clogging of spray nozzles is prevented, and washer is kept operating at peak effectiveness. The Type Y Air Washer provides high saturation efficiency, requires minimum maintenance.



The self-cleaning pneumatic Type ESC Atomizer is a pioneering Bahnson design. For supplementary evaporation with the Central Station System, it provides fine spray quality with low compressed air consumption at economical operating cost. Electric or pneumatic modulating controls available for flexible regulation.

Special Bahnson adjustable grilles offer accurate directional control of air flow with four-way deflection. A removable core facilitates cleaning and allows access to duct interior. For even balancing and distribution, the wide, individually adjustable blades effectively direct air so that temperature and relative humidity are kept uniform throughout the conditioned area.

Bahnson engineering and research staffs offer you the experience and leadership of 40 years in air handling equipment design and manufacture. Your specific air conditioning needs receive top attention in the development of the finest system for application to your individual requirements.

91 OF THE TOP 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

Bahnson
COMPANY
WINSTON-SALEM, N. C.

WRITE US TODAY
for detailed information.
Ask for Bulletin 22A.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION

For more information, write direct or use Reader-Service post card.

Keep Synthetics and Blends "in the pink"

National Nacelan® Pink 3B

Bright, fast shades of pink and bluish red on acetate, interesting bluish red hues on nylon . . . that's the spectral story of National Nacelan Pink 3B. On acetate it has good-to-excellent fastness to light and wet processing; on nylon it exhibits even better fastness properties. It has excellent printing properties on both.

National Nacelan Pink 3B is one more in our expanding line of dyes and printing colors for synthetics and mixtures. Our Technical Service Laboratories can give you very practical help in their selection and application, particularly on the newer synthetics and mixtures. Our booklet "The Coloring of Postwar Synthetic Fibers" contains a wealth of useful information.

Get in touch with our nearest office for a copy of this helpful booklet, for Bulletin #420 giving fastness ratings on Nacelan Pink 3B and for a working sample of this dye.

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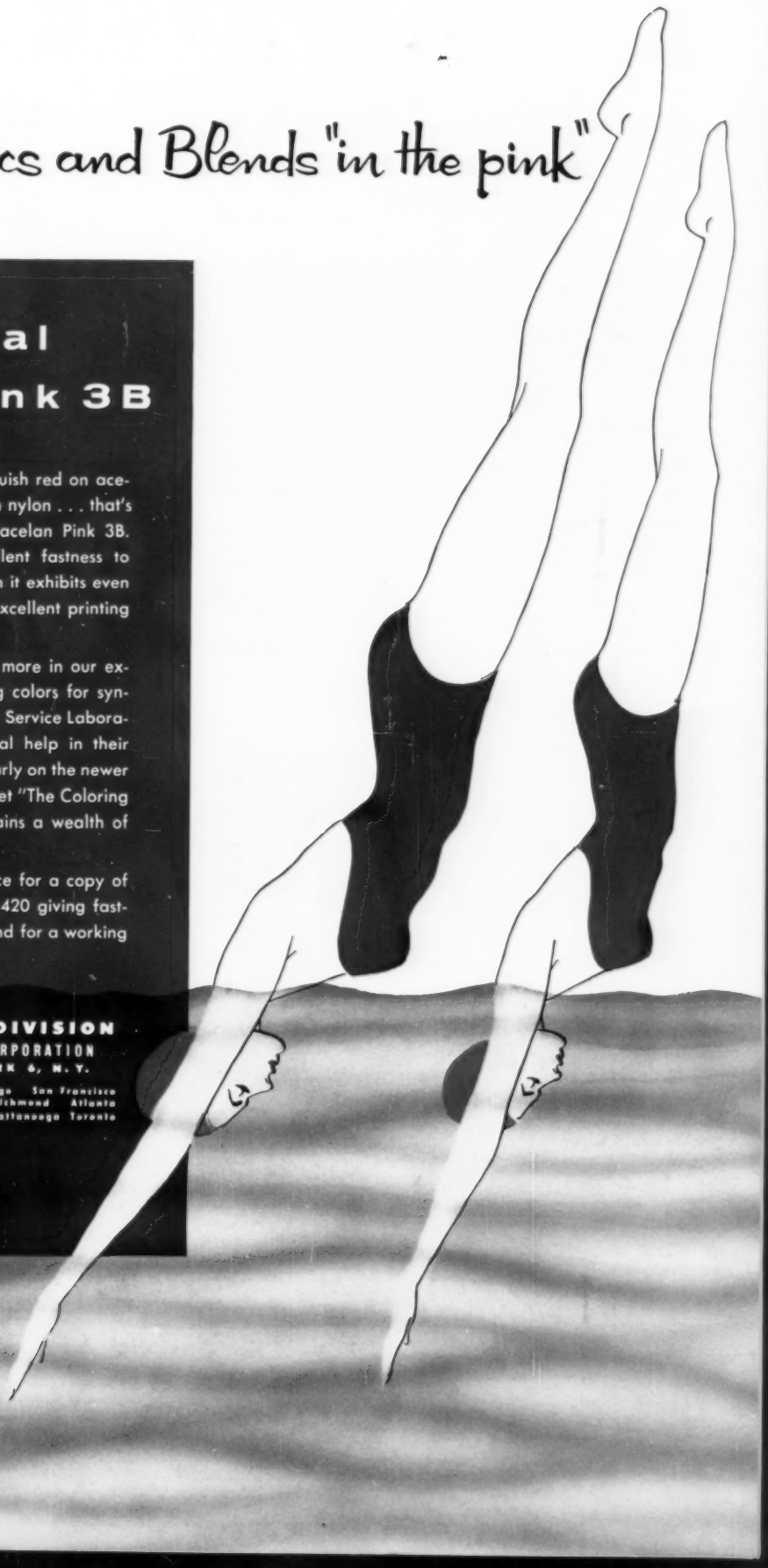

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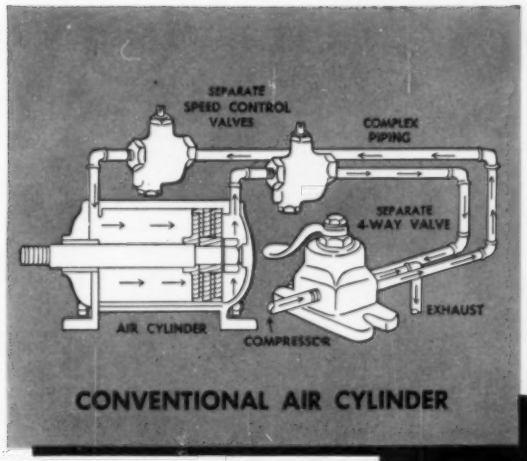


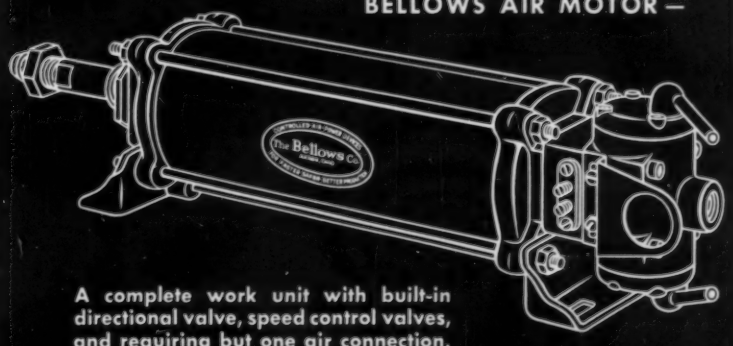
CONVENTIONAL AIR CYLINDER

ONE LOOK

and you can see the

SAVINGS

THE COMPACT, STREAMLINED BELLOWS AIR MOTOR—



A complete work unit with built-in directional valve, speed control valves, and requiring but one air connection.

Design engineers looking for simplicity and economy in air circuit installations will find a quick answer in the two circuits sketched in this ad. One shows a conventional air circuit with separate air cylinder, separate speed control valves, separate directional valve and the piping required to install the circuit. The other shows the Bellows Air Motor—the complete air cylinder package—with directional valve and speed control valves built in, and its single air connection.

But simplification of design and installation problems is actually one of the less important advantages this compact power unit offers. The big advantages are precision control and improved performance. Response is lightning fast; action is smooth and positive. And coupled with improved performance is minimum maintenance —less time out for servicing.

The Bellows Air Motor offers you a choice of *built-in* directional valves: 8v or 110v electrical control, explosion-proof electrical control, manual control, or pilot valve control—in five bore sizes: 1″, 1¾″, 2½″, 3⅜″ and 4½″, and in any stroke length.

This new four-color, 24-page bulletin gives full technical data on Bellows Air Motors.

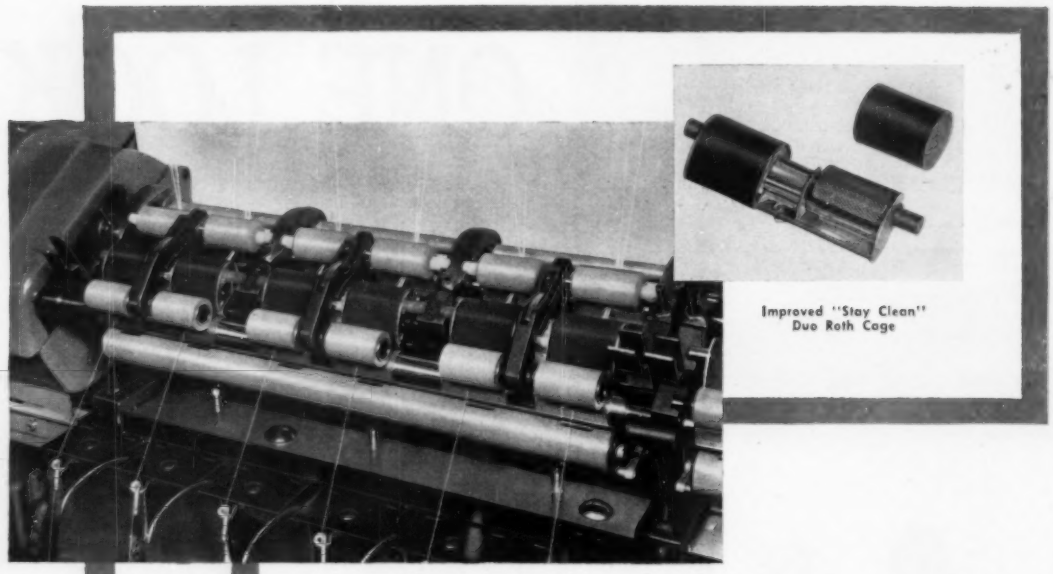
It is free on request. Ask for BM-25. Write Dept. TW-356, The Bellows Co., Akron 9, Ohio. In Canada, Bellows Pneumatic Devices of Canada, Ltd., Toronto.

The Bellows Co.

AKRON 9, OHIO

1379A

FIELD ENGINEER OFFICES IN EVERY INDUSTRIAL AREA IN THE UNITED STATES AND CANADA



Improved "Stay Clean" Duo Roth Cage

5 Good reasons why

"STAY CLEAN"* DUO ROTH by SACO-LOWELL

WILL BETTER YOUR QUALITY, INCREASE PRODUCTION AND REDUCE YOUR COSTS.

OVER 1,400,000 SPINDLES OF REGULAR & STAY CLEAN NOW IN USE.

1. Of great importance is the ability to operate with drafts increased from 50 to 100% over conventional systems, and to do this without any reduction in the effectiveness of the fiber control. This maintenance of fiber control is reflected in a more uniform, stronger, and improved quality yarn from a given stock and with less ends down.

2. Stay Clean characteristics enable you to extend the cleaning cycle in some cases as much as 100% because there are no cap bars to get dirty and there is a minimum of clearer waste with a given draft.

3. The ruggedness of design and simplicity of construction, together with the use of anti-friction bearings, keeps maintenance at a very low figure.

4. All of these characteristics combine into a simple, easy to operate system, facilitating the attainment of quality and strength improvements from your present stock.

5. In practically every installation of "Stay Clean" Duo Roth there is an important reduction in the "ends down" per thousand spindle hours, thus reducing reworkable waste and increasing the overall operating efficiency of the spinning frame.

For further information, or a demonstration, contact the nearest Saco-Lowell Sales Office.

*Trademark

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

for high speed wetting and rewetting

nekal *ws-21*

The new **Nekal WS-21** is designed to give maximum efficiency for both wetting and rewetting at all temperatures. What's more, this liquid form chemical has a pleasant odor and controlled foaming qualities.

Nekal WS-21, the Wetting Agent, will produce excellent results in such operations as:

- ★ High speed continuous dyeing.
- ★ Package and beam machine processing.
- ★ Resin finishing, sizing, desizing and bleaching.
- ★ Wetting in jigs, padders, reel machines and open tubs.

Nekal WS-21, the Rewetting Agent, makes textiles highly absorbent. It is used:

- ★ To give rewetting in sanforizing.
- ★ For rewetting prior to dyeing and printing.
- ★ For finishing purposes on cellulosic and animal fibers.

If a highly concentrated product is preferred, use **Nekal WS-25,** a liquid brand three times the strength of **Nekal WS-21.**

Write today for a circular on **Nekal WS-21** and **Nekal WS-25.**

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A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

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ANTARA gaf

"From Research to Reality"

A-C
ALLIS-CHALMERS

ALLIS-

Room Production Stoppage

with Allis-Chalmers Textile Drive Equipment

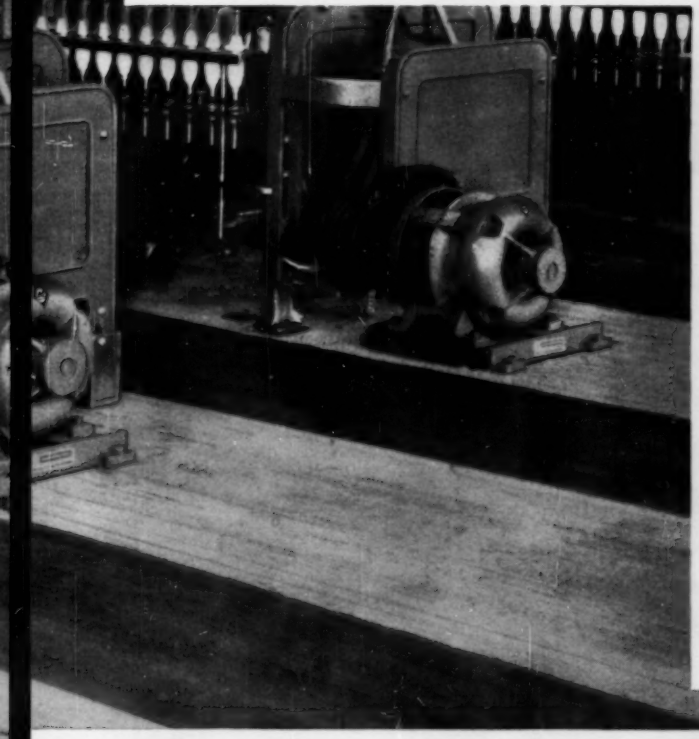
Fewer frame stoppages . . . faster speed adjustment — both are assured when you specify Allis-Chalmers textile drive equipment in your spinning room.

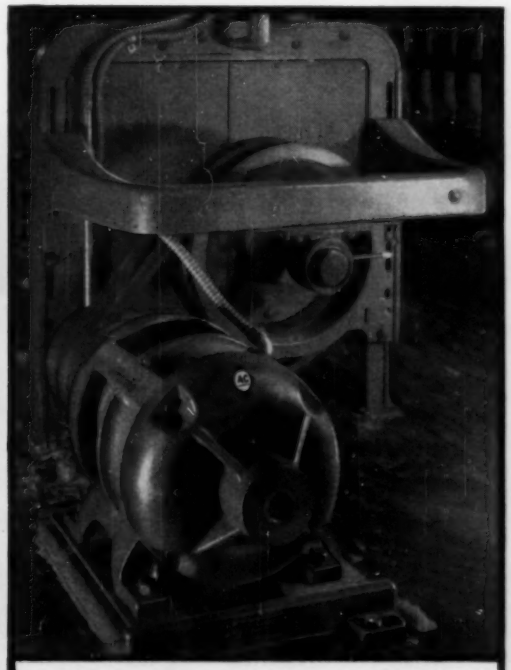
- *Quick-Clean* motors are designed to give lint-free operation. Combination of wide-open design and streamlined surfaces eliminates lint accumulation. The result: Allis-Chalmers motors run cool for a long time.
- *Vari-Pitch* sheaves, member of the famous *Texrope* family, provide in seconds the exact speed required for any yarn number. No complete pulley changeover is needed.

As a new component or as replacement, specify Allis-Chalmers all through your mill. Contact your nearby A-C distributor, A-C sales offices, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin. A-4954

Quick-Clean, Vari-Pitch and *Texrope* are Allis-Chalmers trademarks.

The engineered partner of A-C motors and drives is Allis-Chalmers control





Compact Combination

of *Texrope* drive, *Quick-Clean* motor and control fits snugly beside frame.

CHALMERS

Wellman Combing Company, Johnsonville, South Carolina
This plant, the first wool processing plant in the Southeast, and owned by Nichols and Company, Inc. of Boston, the largest wool treatment concern in the country, recently went into production. It has a capacity of 20 million pounds of grease wool per year, and is planned for enlargement to four times that capacity.

DANIEL CONSTRUCTION CO., BUILDERS

LOCKWOOD GREENE PROJECTS IN . . . . .

WOOL PROCESSING

Lockwood Greene's work, originating in 1832 with the design of textile mills, amounting to a present total of around one billion dollars in value, now includes the first two wool processing plants in the Southeast, here shown, for the world's two largest wool processing firms.

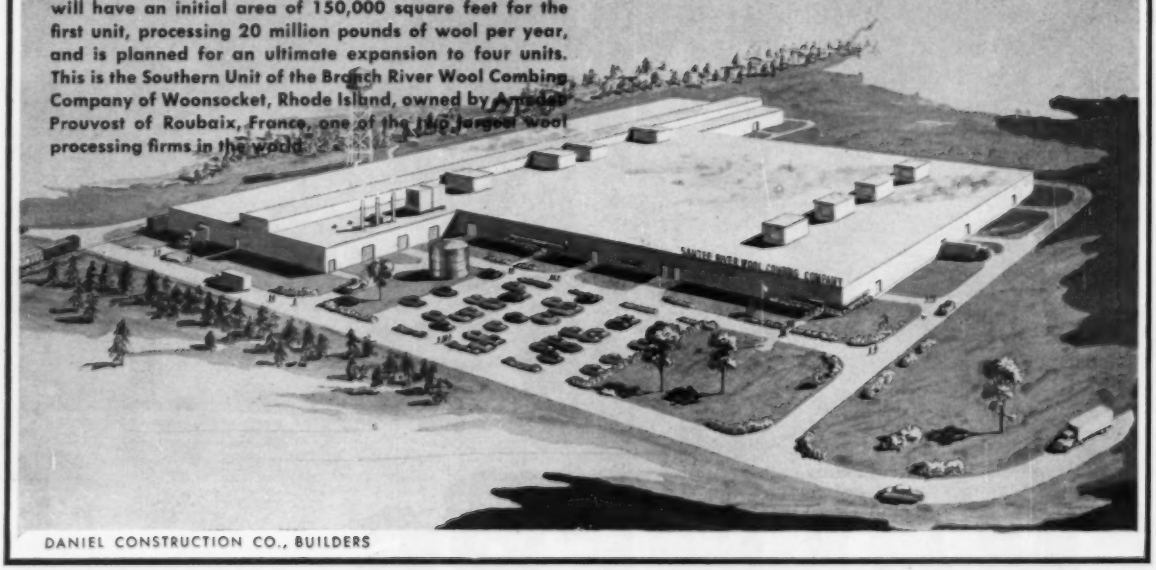
Continuous management services from site selection to plant completion.

LOCKWOOD GREENE
ARCHITECTS — ENGINEERS

BOSTON 16, MASS. 316 Stuart Street · NEW YORK 17, N. Y. 41 East 42nd Street · SPARTANBURG, S. C. Montgomery Building

OVER A CENTURY OF INDUSTRIAL PLANT EXPERIENCE

BROCHURE AVAILABLE UPON REQUEST



Santee River Wool Combing Company, Jamestown, S. C.
This plant, the second wool processing plant in the South, will have an initial area of 150,000 square feet for the first unit, processing 20 million pounds of wool per year, and is planned for an ultimate expansion to four units. This is the Southern Unit of the Branch River Wool Combing Company of Woonsocket, Rhode Island, owned by Amedee Prouvost of Roubaix, France, one of the two largest wool processing firms in the world.

DANIEL CONSTRUCTION CO., BUILDERS

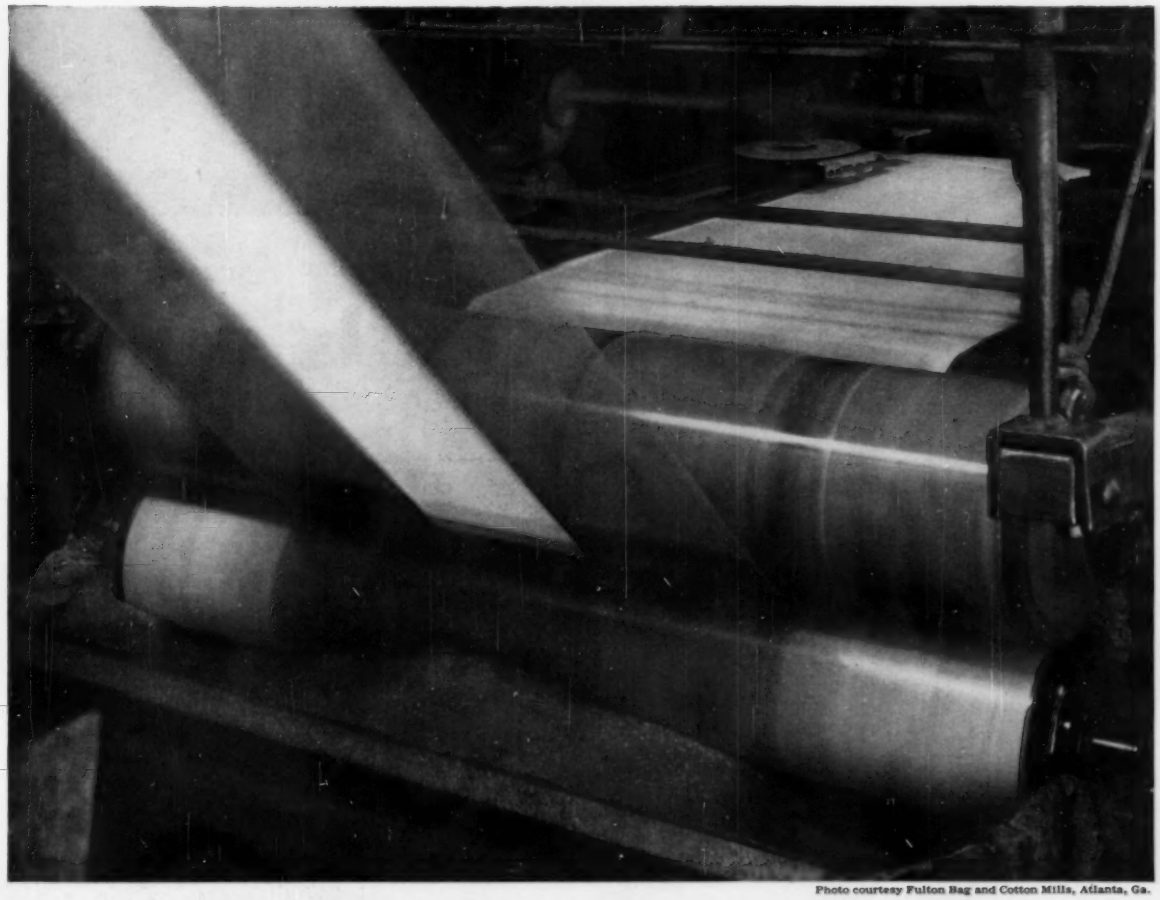


Photo courtesy Fulton Bag and Cotton Mills, Atlanta, Ga.

How to "Net" a Higher Profit

One way to net a higher profit is to improve product quality. And many more than one textile manufacturer has found PLIOLITE LATEX can do just that.

Take the leno fabric shown above. Its manufacturer was having trouble in obtaining full, bright colors that would last. Then he switched to a pigment dye system based on PLIOLITE LATEX. The results: Brilliant, crock-resistant colors plus excellent hand and good binder properties.

PLIOLITE LATEX is a colloidal dispersion of a high styrene-butadiene copolymer. It is easily formulated into pigment vehicles that dry rapidly to form tough, flexible, abrasion-resistant finishes. Its excellent mechanical stability permits the development of colors to their fullest extent and simple, straight application of the finish to the fabric – on existent equipment.

Crock-resistant pigment dye systems are but one use for PLIOLITE LATEX in the textile industry. CHEMIGUM and PLIOVIC Latices by Goodyear are also finding wide application in permanent sizes, saturants, other types of finishes, inks and adhesives that improve both appearance and performance. For details, write to: Goodyear, Chemical Division, Akron 16, Ohio.

CHEMICAL
GOODYEAR
DIVISION

COATINGS
DEPARTMENT

Chemigum, Plioflex, Pliolite, Plio-Tuf, Pliovic – T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMIGUM • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS

High Polymer Resins, Rubbers, Latices and Related Chemicals for the Process Industries

mills report

yarn uniformity improves

with DAYCO Rub Aprons

Surest way to improve uniformity *overnight* is to equip every card you have with revolutionary, new, improved Dayco Rub Aprons—today!

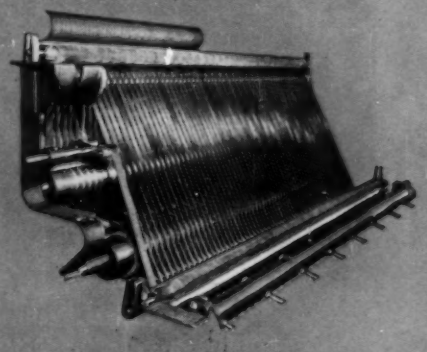
Greater uniformity has been reported by mills using Daycos, plus really substantial savings in time and money through reduced downtime and maintenance.

Tremendously improved uniformity results from Daycos' higher coefficient of friction and the ability of the two layer, reinforced, rubber-impregnated fabric to reduce eccentric motion up to 33%. In addition, the new, improved surface of the Dayco Aprons never becomes glazed, thus assuring proper density to the yarn.

You'll get better traction, better tracking and improved non-slip drive by virtue of the perfectly concentric construction that makes them hug the roll tightly at all times. Stronger ends grip buttons tenaciously for long, efficient, trouble-free service.

Unaffected by emulsion oils, easily-installed Dayco Aprons do not "grow".

Dayco Aprons generate less static and are not affected by temperature or humidity. For complete details on the new Dayco Rub Apron contact your Dayton representative or write Dayton Rubber Co., Textile Division, 401 National Bank Bldg., Greenville, S. C.



Dayco Endless Condenser Tape

Features offering additional savings . . . greater card efficiency:

- No stretch—little need for take-ups
- Less tendency to twist or turn over
- Easy to clean—require less attention
- Unaffected by oil or static
- Will not crack, economical, efficient

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Dayton Rubber 51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile products for Better Spinning and Weaving

News about

B. F. Goodrich Chemical *raw materials*

Geon Vinyl Latex...

opening new markets for textiles

GEON vinyl latex gives new qualities to many woven and non-woven fabrics—upgrades materials for better quality and sales appeal.

HERE'S HOW—

As a binder for non-woven fabrics Geon latex makes entirely new materials of many kinds of non-woven fabrics—gives them a durability, tear strength and abrasion resistance that makes new applications pop up everyday. Some of these are: non-woven dish towels and wash cloths with complete water and washing resistance and linings and stiffeners for clothing.

Impregnated in fabrics Geon latex is used in bandages and bed sheeting, where as a strengthening and water resisting agent it must also withstand sterilization in super-heated steam.

As a heat sealable coating Geon latex is used in non-woven materials between the board stiffener and vinyl upholstery of automobile interiors (on doors) and makes a seal that is moisture insensitive.

To find out how Geon can open new markets for your textile products, please write Dept. DV-2, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.

GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

Whitin-Schweiter FILL-MASTER* Filling Winder

The latest addition to Whitin's winder line, the Whitin-Schweiter FILL-MASTER Automatic Filling Bobbin Winder, is a highly versatile machine — a fully automatic, high speed, filling winder with many attractive and unusual features. Among these, a new exhaust device will be very advantageous to all mills encountering dust, lint, and fly in the rewinding process. Each supply package and tension device is housed in a transparent enclosure from which fly, etc., is removed to a dust collector.

ADDITIONAL FEATURES

- Speeds up to 10,000 R.P.M.
- Tail-less Bobbin
- Scissor and Tail Cutter eliminated
- Spindle speed adjustable over wide range for every spindle position
- Automatic empty bobbin loader or new manual or loaded multicell magazine
- New variable layer locking traverse prevents sloughing
- Quick positive adjustment for wound bobbin diameter
- Will handle bobbins up to 10⅛"

* Trade Mark

Whitin
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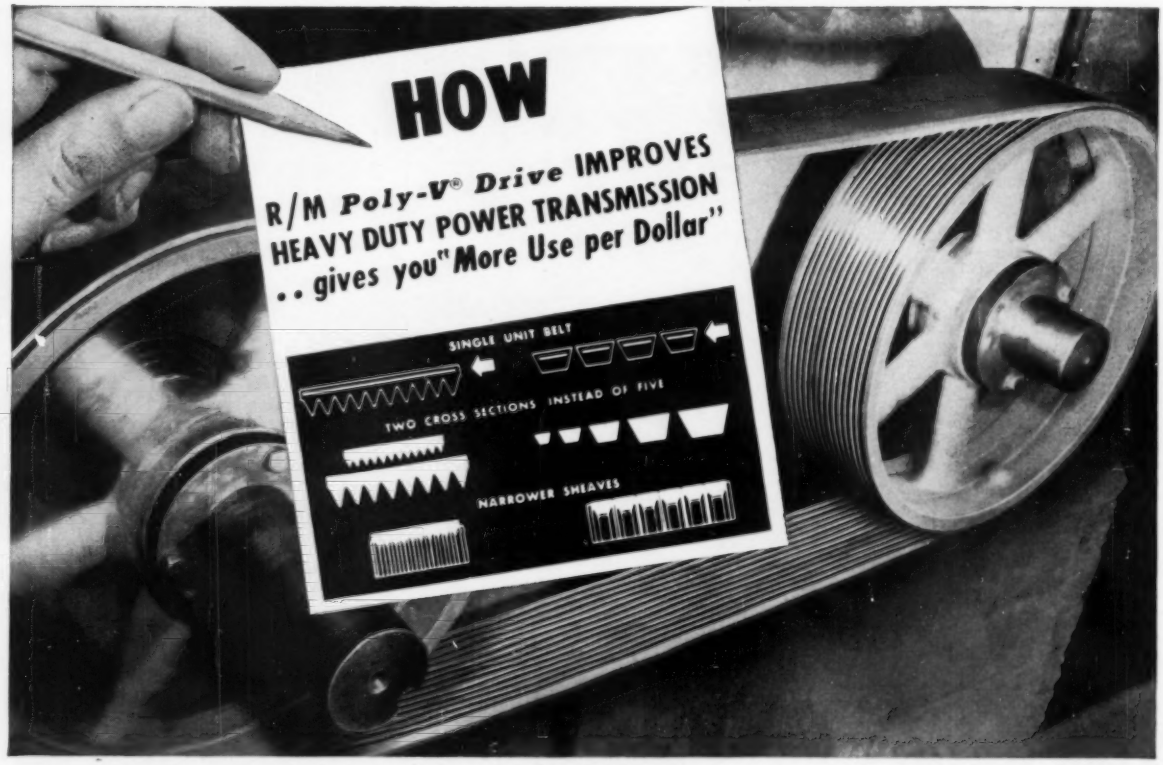
Special sales agent: H. J. THEILER CORPORATION — Whitinsville, Mass., Spartanburg, S. C.



R/M *Poly-V®* Drive

Delivers More Power in Less Space!

No other belt drive can deliver as much power in the same space. It's R/M's patented Poly-V Drive developed by R/M engineers after years of research. This totally new concept in power transmission delivers up to 50% more power than a conventional V-belt drive of equal width.

Unique design accounts for the unusual power capacity of R/M Poly-V Drive. A *single, endless* belt with parallel V-ribs runs on sheaves specially designed to mate precisely with the belt ribs. The uniform pull of this single unit belt distributes drive load evenly over the full width of the sheave . . . gives higher horsepower capacity per inch of drive width than ever before possible.

There are many advantages in this space-saving drive wherever heavy duty power transmission is required . . . in the equipment you manufacture—or the equipment you use in your plant. Poly-V Drive has eliminated the matching problems of multiple V-belt drives, greatly increased the life expectancy of belts and sheaves and maintains more constant speed ratios under all loads. Just *two* cross sections of Poly-V meet every heavy duty power requirement—R/M Poly-V Drive cuts costly belt and sheave inventories to a new low!

Let the R/M engineers who developed Poly-V Drive work with your engineers to improve your power transmission applications. Contact R/M . . . or write for a copy of Poly-V* Drive Bulletin #6638.

CONDOR V-BELTS • R/M SUPER-POWER V-BELTS

Write for Bulletin #6868 on the complete line of Condor V-Belts for regular service on conventional V-belt drives. Also write for Bulletin #6628 on R/M Super-Power V-Belts with 40% more Horsepower capacity where needed.

*Poly-V is a registered Raybestos-Manhattan trademark

RM 648

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Laundry Pads and Covers • Bowling Balls

For more information, write direct or use Reader-Service post card.

ANOTHER AHCOVAT JADE GREEN

AHCOVAT JADE GREEN 2G EXTRA DOUBLE PASTE

Controlled at every step to produce trouble-free bright green shades with typical *vat* fastness. On request — samples for testing in your laboratories.

Also:

AHCOVAT JADE GREEN 2G EXTRA DOUBLE POWDER
AHCOVAT JADE GREEN B EXTRA DOUBLE PASTE
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AHCOVAT JADE GREEN B EXTRA DOUBLE POWDER
AHCOVAT JADE GREEN BDA DOUBLE PASTE
AHCOVAT JADE GREEN BDA DOUBLE PASTE FOR PRINTING
AHCOVAT SOLUBLE GREEN IB POWDER
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AHCO DYES

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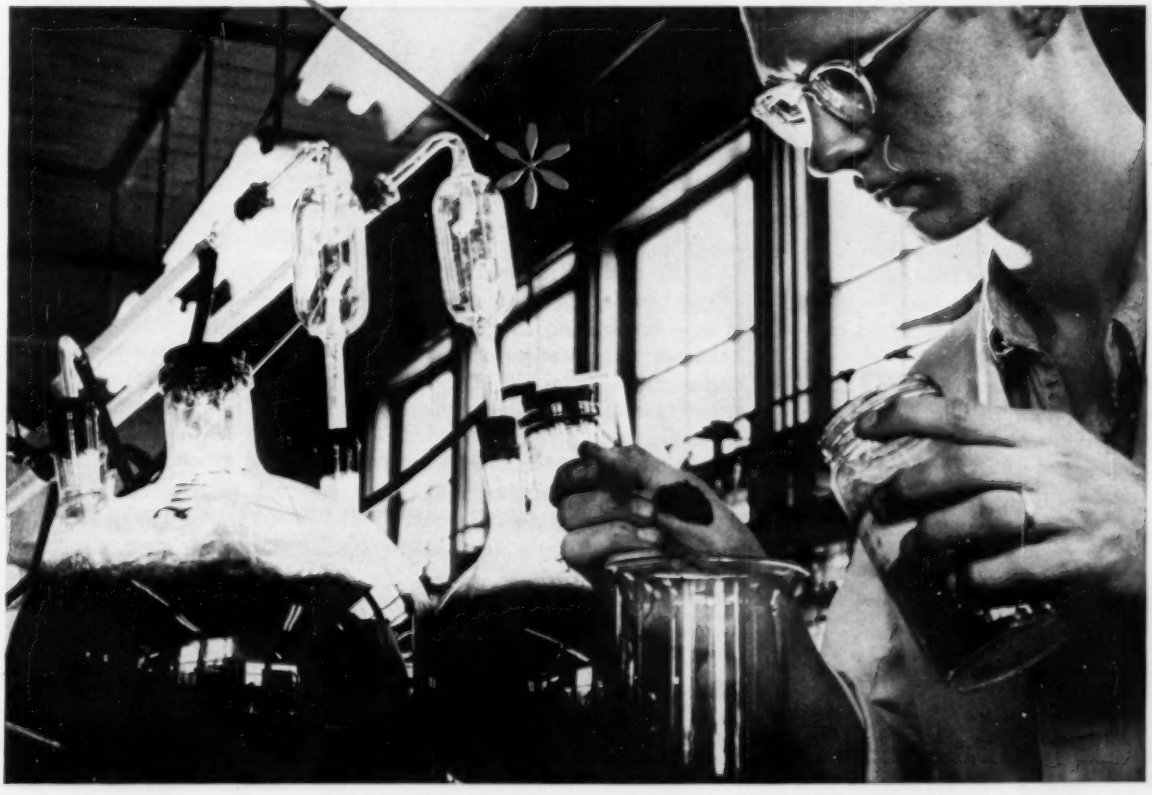
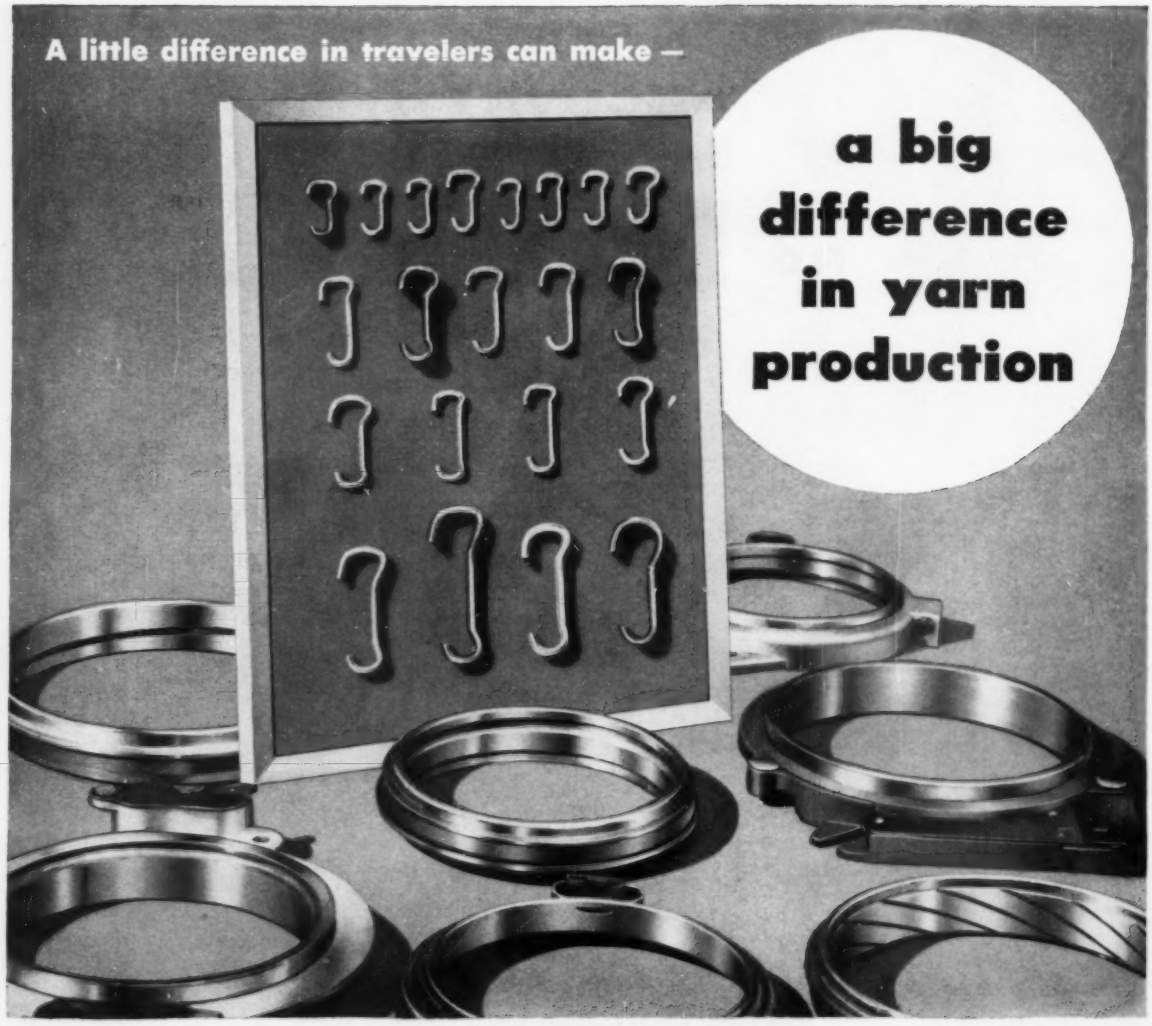




THE DIFFERENCE between various styles of travelers made for lubricated vertical rings, may be hard to see at a glance. But it's a very important difference.

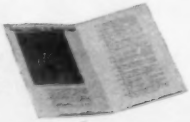
Unless the traveler design is exactly right for the ring, much of the advantage of lubrication will be lost. Also, unless the design is exactly right for the yarn being processed, ends-down will cut production, and quality will suffer.

Whether you are running novelties like boucles, poodles, or seed yarns, — or twisting the heavier stocks normally processed on lubricated rings, Victor has the right vertical travelers to keep your production trouble-free.

You'll find it well worthwhile to check over your operations with a Victor Service Engineer. He can often show you that "headaches" you've taken for granted can be readily cured. Write, wire, or phone the nearest Victor office.

VICTOR VERTICAL TRAVELERS

representative of the styles commonly used on lubricated rings are described in this folder, with useful information on selection. Ask for Form VTN.



Keep a Step ahead with

VICTOR Ring Travelers

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . 20 Mathewson Street . . . . . Tel. DExter 1-0737

GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . Tel. UNiversity 5-0891

NEW HIGH-SPEED, DOUBLE-HEAD PIN DRAFTER®

doubles production

IN SAME FLOOR SPACE!

- **CAPACITY INCREASED 100%**
  6-inch faller bars—13 yards per minute in-feed speed.
- **BETTER BALANCED PRODUCTION**
  From first through third operations.
- **EASIER OPERATION**
  Enables operator to handle more poundage.
- **SIMPLIFIED DESIGN**
  Minimum maintenance—greater accessibility.
- **PRODUCES SLIVER WEIGHTS UP TO 5 OUNCES.**
- **APPLICABLE TO FRENCH, BRADFORD OR AMERICAN SYSTEMS, AND DYE HOUSE OPERATIONS.**
- **HANDLES WOOL, SYNTHETICS, OR BLENDS.**

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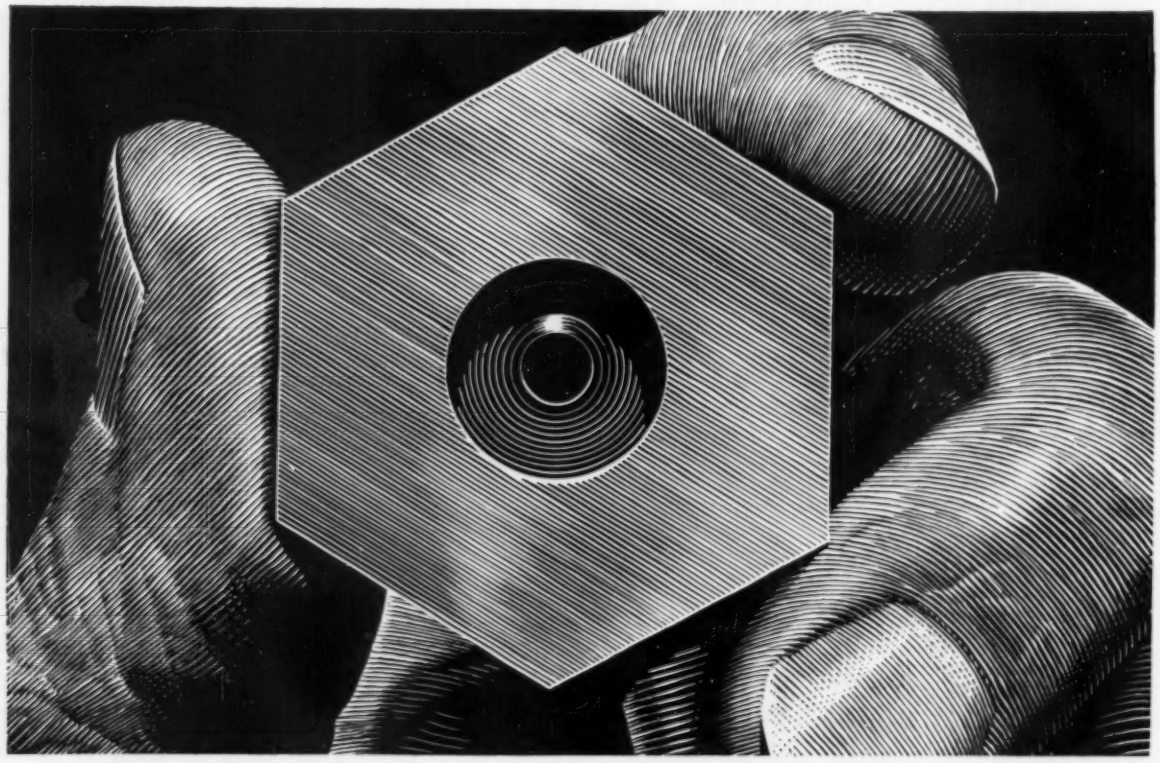
YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY



New Self-cleaning Spray Nozzle*

CARRIER DEVELOPS SPRAY NOZZLE THAT CAN'T CLOG

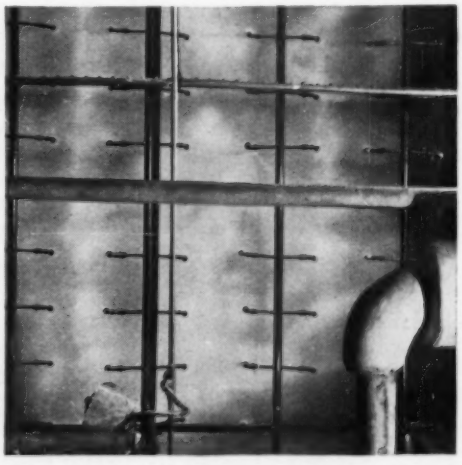
Latest in a long parade of Carrier "firsts" is a spray nozzle that literally spits out lint and foreign matter. It simply can't clog.

The Carrier "Cant-Clog" nozzle consists of a heavy-duty brass body and threaded cap with special built-in flexible diaphragm. Water is forced through the small hole in the diaphragm to create an efficient spray pattern. If lint or foreign matter becomes lodged within the nozzle behind the diaphragm, water pressure increases to extend the diaphragm—thus enlarging the hole and forcibly ejecting the foreign matter.

In a year and a half of testing in a large South Carolina mill of a leading textile manufacturer, the nozzle has proved an unqualified success. The plant engineer of this mill reports: "We have exceptionally heavy lint conditions. The Carrier nozzle has operated almost continuously in our mill since August, 1954. We are highly pleased with it. Labor costs for maintenance have been virtually eliminated."

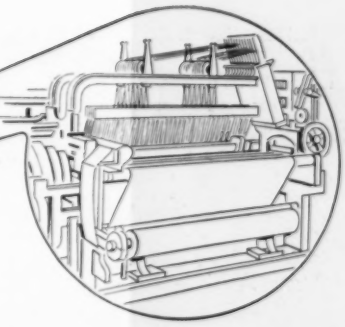
You can reduce *your* nozzle maintenance to zero by installing a Carrier Air Washer equipped with "Cant-Clog" nozzles . . . or by using them to replace the nozzles on your present washer. To find out what this can mean in *your* plant, call the nearest Carrier office. Or write Carrier Corporation, Syracuse, New York. *Pat. Pend.

Below: This air washer installation serves carding, opening and picking rooms in a large South Carolina textile mill. Carrier "Cant-Clog" nozzles perform so efficiently that tank screens have been removed altogether.



Carrier air conditioning • refrigeration • industrial heating

custom-designed **COLORS**
for the **acetate** dyer...



Have YOU looked at the new "Amacel Supra" qualities?

You should NOW!

Amacel*

ACETATE COLORS

When **color fastness** and **quality** are primary, leading acetate dyers rely on the AMACELS, available in a wide range of colors for **dyeing** and **printing** acetates of every type. Experience has taught them that AMACELS are precisely suited to their special needs . . . offering excellent fastness to light, gas fading, sublimation, and decatizing.

It will pay you to try these popular colors by A.A.P., first successful U.S. producer of dyes designed especially for acetate fibres. See for yourself their consistent shade purity . . . good "pile on". . . simplified application. Use them for piece dyeing (box or jig), acetate yarn, Nylon hosiery, or for printing (screen or machine).

For full details and data tailored to your individual requirements, consult our nearest branch. A.A.P. technicians will be happy to arrange a demonstration at your convenience.

AMERICAN ANILINE PRODUCTS, INC.

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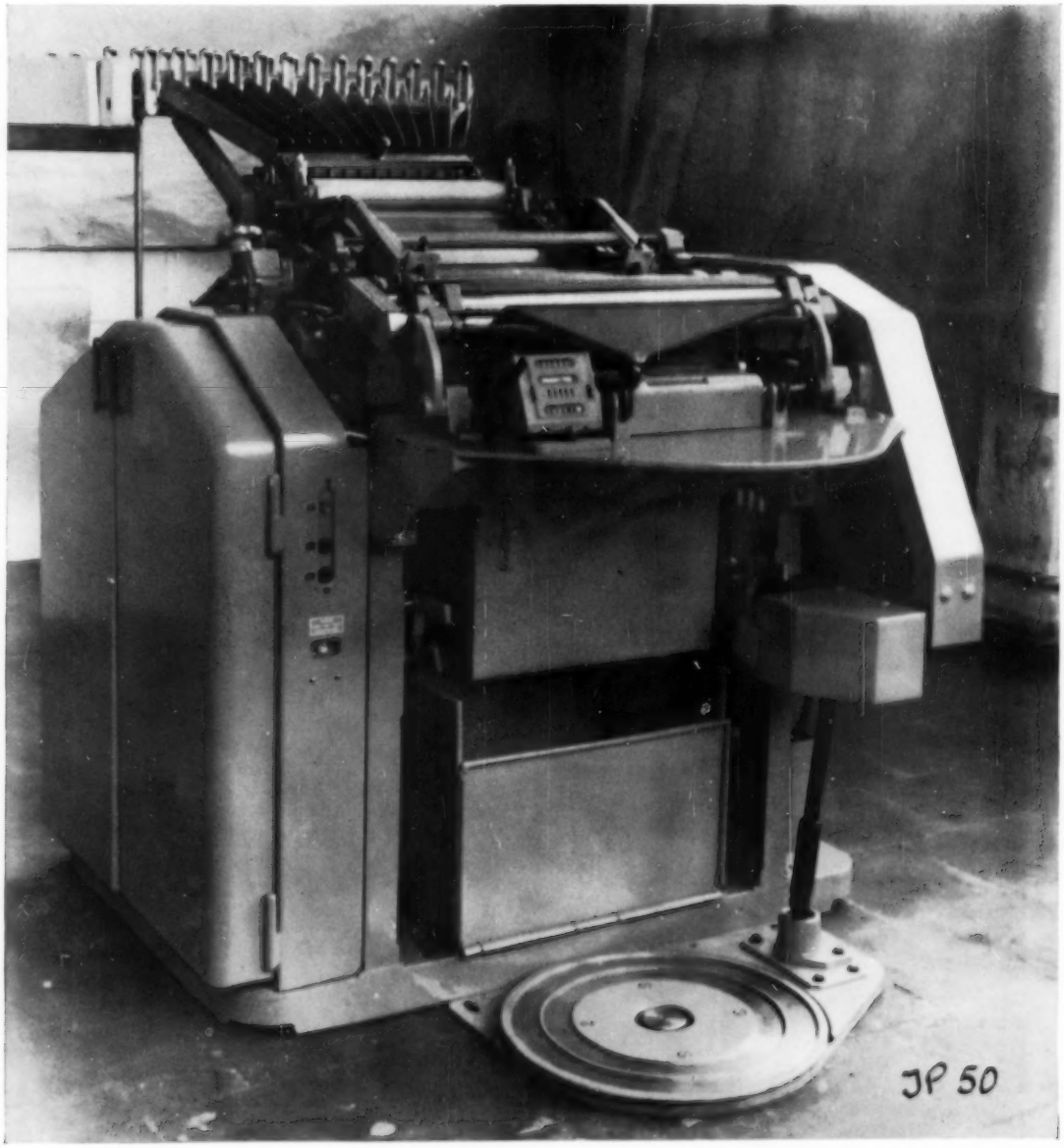
WORLD FAMOUS

SCHLUMBERGER COMB

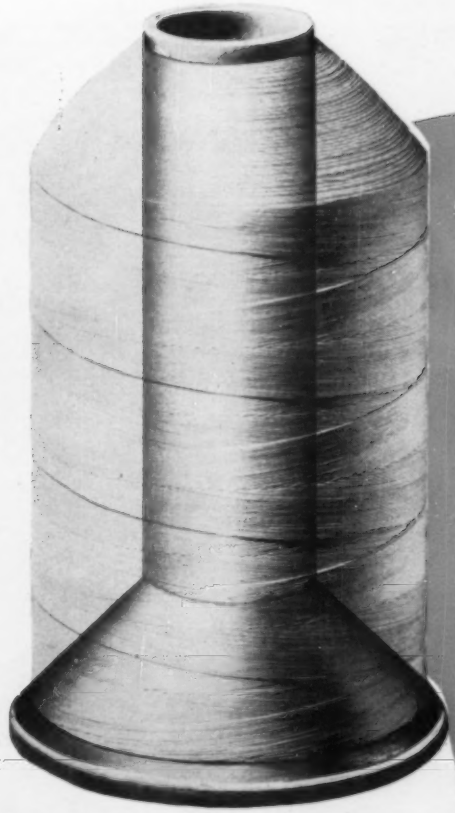
for French-Type Worsted Mills



OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

Also other worsted preparatory machinery

N. SCHLUMBERGER & CIE GUEBWILLER, ALSACE, FRANCE
Founded 1808



Thrifty SONOCO SINGLE HEAD SPOOLS

standard of the world!

A SONOCO development widely accepted by the industry for economical packaging of industrial threads. The tapered base permits even and free delivery without "snagging" during "take-off." Choice of smooth, Velvet or Unitex surface; ground ring, deep score or printing on the barrel. Can be supplied with metal ring in base of barrel for increased strength. Colored lacquer tips can be applied where required for identification. Consult your SONOCO sales-engineer or write direct for complete information.

Standard Sizes for Single Head Spools:

Base Diameter—2½"	
Base Diameter—2¾"	
Base Diameter—3"	Barrel Lengths—2¾"
Base Diameter—3¼"	Barrel Lengths—4$\frac{3}{16}$"
Base Diameter—3½"	Barrel Lengths—5¾"
Base Diameter—3¾"	
Base Diameter—4"	

3½" and 4" base spools available with barrel lengths 6⅜" long, also special barrel lengths for all bases. Double head spools can be supplied to meet your specified requirements. Plastic Single Head Spools also available in standard sizes shown above and in a variety of colors.

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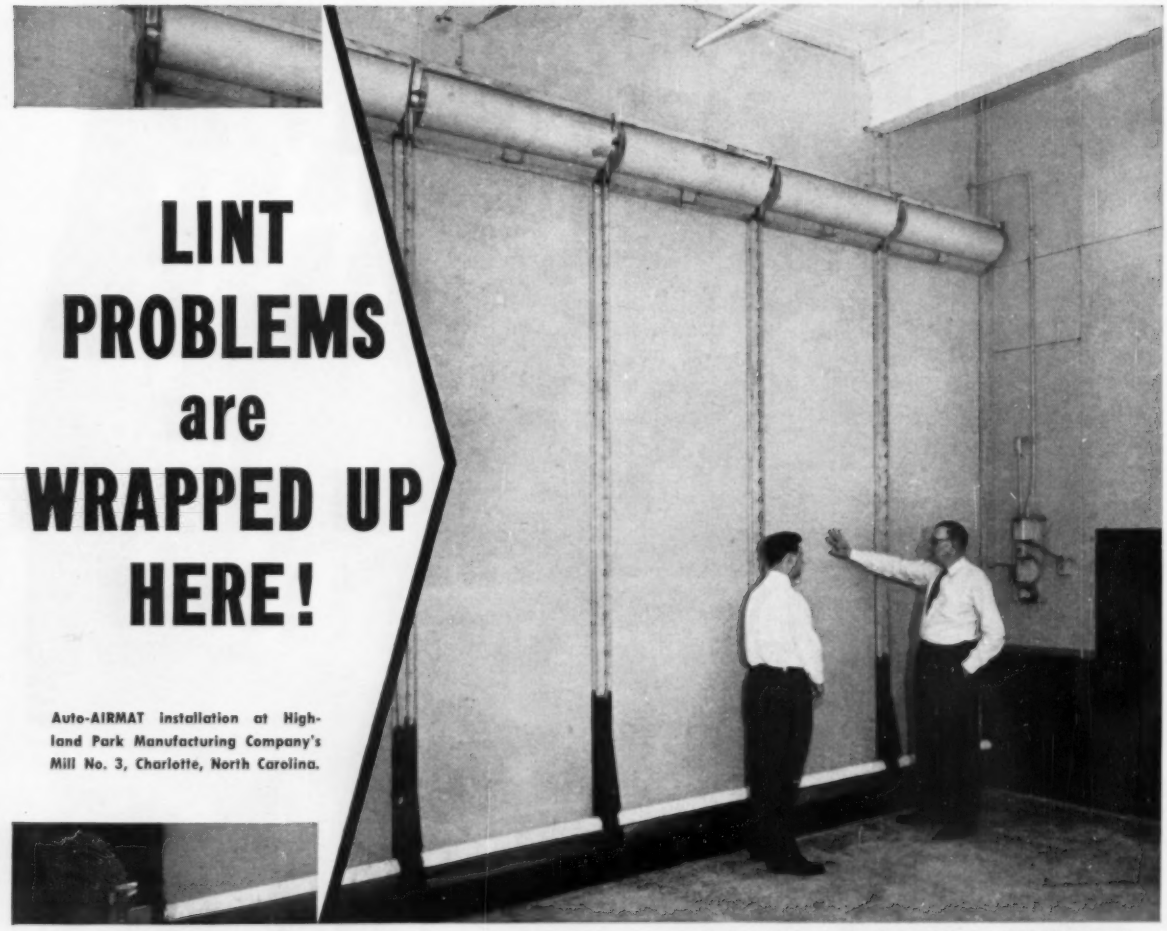

LINT PROBLEMS are WRAPPED UP HERE!

Auto-AIRMAT installation at Highland Park Manufacturing Company's Mill No. 3, Charlotte, North Carolina.

Air Conditioning system designed by J. E. SIRRINE & CO., Greenville, S. C. Installed by WHITE AND COMPANY, Charlotte, N. C.

Auto-AIRMAT Installation Eliminates Lint Automatically At Highland Park Plant

LINT never gets a chance to foul up air washers here! AAF Auto-AIRMAT lint filters stand guard on two air conditioning systems supplying 111,000 cfm of air to spinning and carding rooms.

The Auto-AIRMAT is the *only* filter designed specifically for lint. Airmat filtering material, installed in roll at top of unit, moves down the face of the filter and is re-rolled at bottom with its lint load. As the curtain collects lint, new material automatically unrolls to keep resistance at proper level. And collected lint is wrapped up in a handy disposable roll!

If you've got a lint problem, get the facts on the *lint filter*—AAF's Auto-AIRMAT. Call your local American Air Filter representative, or write direct for Bulletin 234.

AAF herman nelson

American Air Filter
COMPANY, INC.
304 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

Herman Nelson Unit Blowers

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BETTER AIR IS OUR BUSINESS

Illinois Steam Heating Specialties

Air Filters and Precipitators

For more information, write direct or use Reader-Service post card.

NOPCOSIZE® N

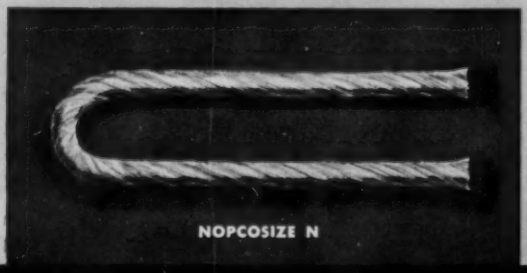
sizes producer's twist and stays flexible!

Yes, it's true! New Nopcosize N stays completely pliable even in the extra-heavy sizing necessary for low twist nylon because it's *internally plasticized* by a special process. Nopcosize N doesn't merely coat —it actually penetrates between the filaments giving proved bonding.

With conventional size, the amount must be limited by its stiffness, but, because Nopcosize N *is* pliable, a greater depth of size protection is possible . . . your best safeguard against filament breakage. This flexibility also prevents Nopcosize N from becoming brittle, flaking off, and acting as an abrasive.

Best of all, fabrics made from warps sized with Nopcosize N scour out to the cleanest goods this industry yet has attained. Internal plasticizing allows depth of protection without causing tear drops, so you're assured of smooth, flawless material.

This all means less time-and-money-consuming extra steps for you. And this clear, aqueous product is so easy to use. Ordinary temperature and concentration changes will never affect its working viscosity. But prove to yourself that Nopcosize N will solve your nylon sizing problems.
Nopco Chemical Co., Harrison, N. J.



SEE THE DIFFERENCE! This enlargement shows how much more flexible yarn is when sized with Nopcosize N. Yarn on the left was sized with 2¼% Nopcosize N. Yarn on the right was sized with 2% of a conventional size.

NOPCO

PLANTS: Harrison, N. J. • Cedartown, Ga. • Richmond, Calif.
London, Ont. Canada

NOPCOSIZE N—*your best defense against:*

POOR SCOURING
FILAMENT BREAKAGE
TEAR DROPS
ABRASION

 For more information, write direct or use Reader-Service post card.

NEW TWISTS in stretch yarn processing

Universal provides a complete service— including special machinery, easy financing, expert technical aid and market information

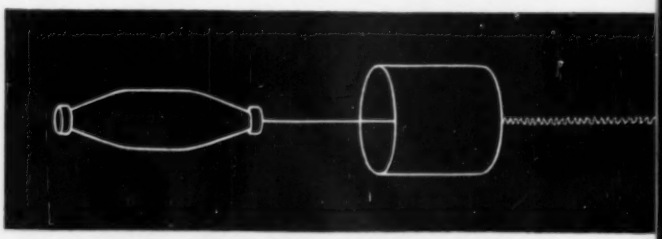
Universal has developed a comprehensive service for stretch yarn production that covers every factor from pirn to finished product. Here are the highlights:

Special Machines — In line with its long established leadership in the manufacture and development of textile machinery, Universal was first to go "all out" to meet the industry's needs for new type machines to process the new "magic" yarns. As a result of this pioneering, Universal is the recognized headquarters for machines especially developed to handle all the popular new bulk and stretch yarns. These machines have thoroughly proved themselves in production. Today they are on the job, operating smoothly and successfully.

Practical Financing — In recent years Universal's Pay-As-You-Profit Plans have been enabling mills to acquire up-to-the-minute textile machinery, without jeopardizing their cash, capital position or borrowing power. Applied to the new Universal machines for processing stretch and bulk yarn, these popular plans provide for long-term purchase or long-term lease.

Plus...

The Universal Yarn Evaluation Department — Universal realizes that its obligations do not end with supplying and financing new machinery. Equally important in the stretch yarn field is a knowledge of how to process the new yarns to obtain the fabric results desired, and how to gauge their marketing possibilities.



For this purpose the Universal Yarn Evaluation Department has been established. Important goals of the new Department include:

Setting up standards for producing and testing stretch yarns; providing samples to mills, recommending test procedures, and appraising samples submitted by mills; thorough investigations of possible trends, needs and end uses.

For further facts, see your Universal Representative or write direct.

UNIVERSAL WINDING COMPANY

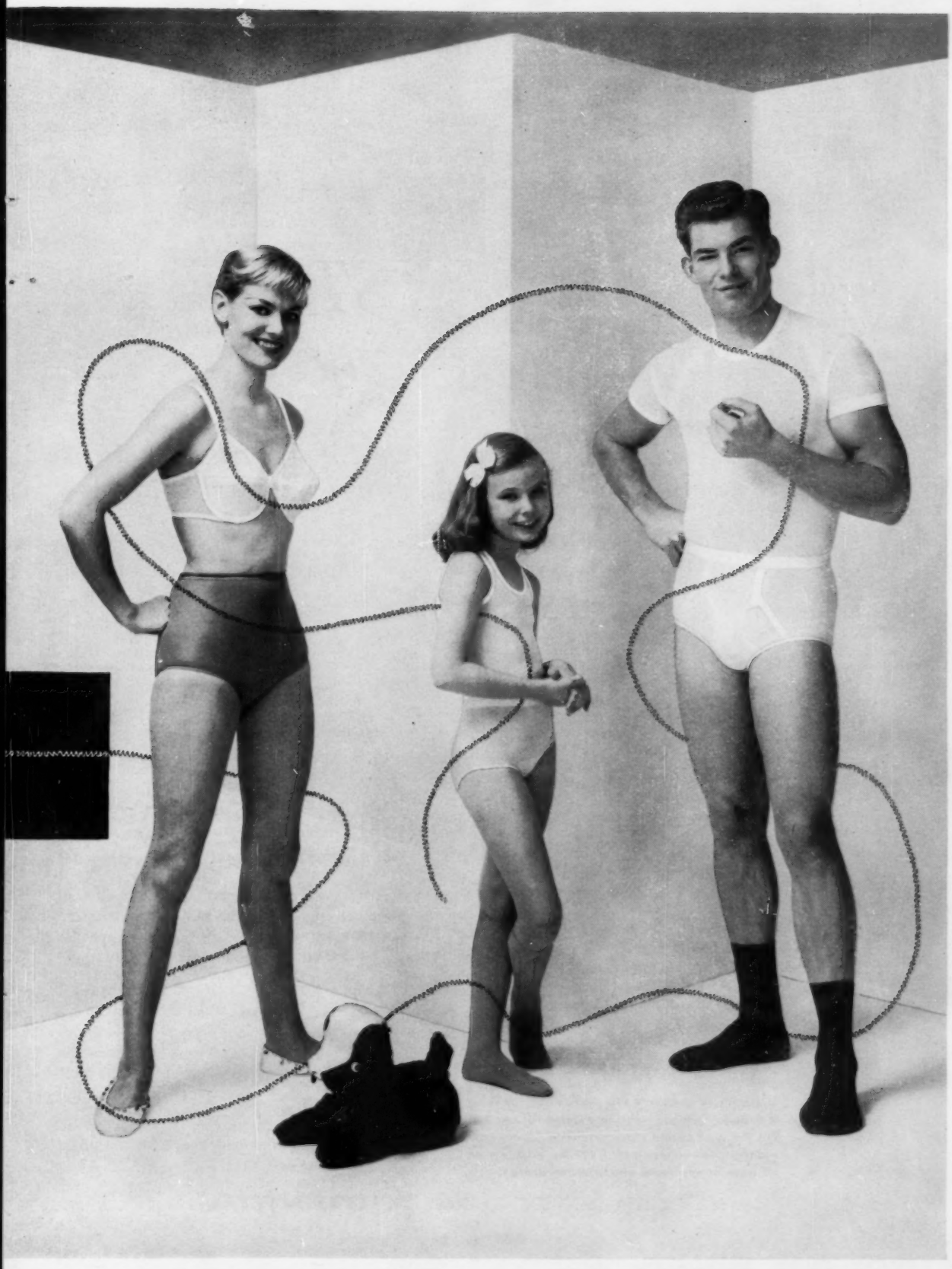
P. O. BOX 1605, PROVIDENCE 1, R. I.

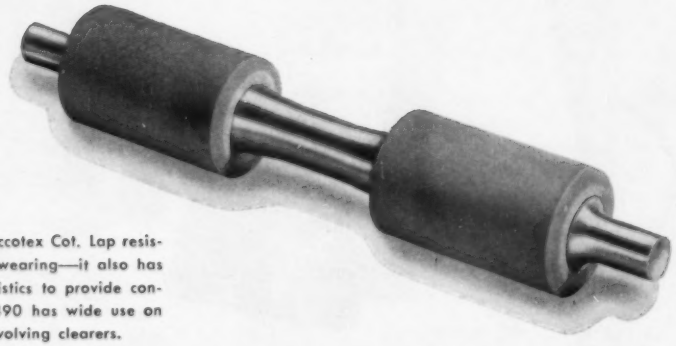
Sales Offices: Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles

Winding and Twisting Machinery for Natural and Synthetic Yarns

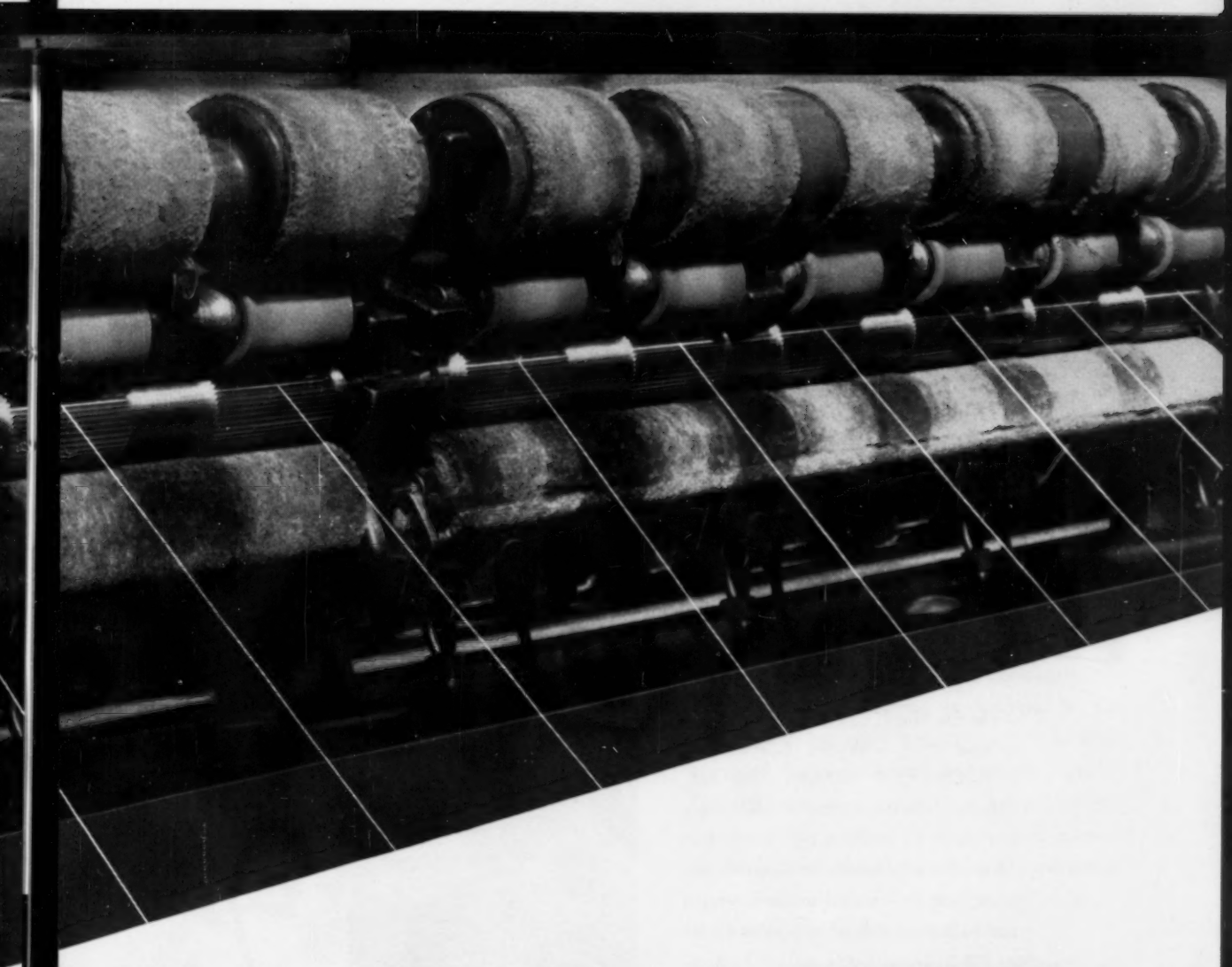
23.5.26

For more information, write direct or use Reader-Service post card.





This is the remarkable J-490 Accotex Cot. Lap resistant, clean running, and long wearing—it also has just the right surface characteristics to provide consistently good yarn control. J-490 has wide use on all types of equipment with revolving clearers.



Not a lap-up in sight!

The reason: J-490 Accotex® Cots have built-in lap resistance

In mill after mill, the story is always the same: "Armstrong J-490 Accotex Cots help prevent front-roll lapping." And that's the case whether the mill is spinning natural fibers, synthetics, or blends.

J-490 provides this unusual lap resistance because it's made of a special, patented synthetic rubber compound. Electrolytes built into this compound neutralize the electrical attraction between cot and fiber, eliminating the basic cause of lapping. In fact, J-490 Cots actually tend to repel broken ends.

This cot offers other important spinning advantages, too. Because it contains no rough fillers, its drafting surface is always uniformly smooth. The J-490 won't pull short fibers from the stock and cause excessive ends down. It turns out strong, uniform yarn—year after year.

All that's needed to keep the J-490 Cot spinning like new is an occasional rebuffing. Why not arrange for a test frame next time your Armstrong man calls? And write for the booklet, "Armstrong Textile Roll Coverings and Mill Supplies." Address Armstrong Cork Company, Industrial Division, 6503 Dauphin Street, Lancaster, Pennsylvania.

If eyebrowing is a problem in your spinning room, try the Armstrong NO-742-S Cot. It has a "constant friction" surface that packs waste back under the clearers and stops eyebrows from forming.

Armstrong ACCOTEX COTS

. . . used wherever performance counts

Winding Coarse Yarns?

Write your own ticket with America's finest "COP"

Yes, the finest winder for the coarsest textile fibres . . . Healthy savings are a sure thing with the SCHWEITER HOLLOW COP WINDER TYPE MT. Compare the production in one American plant, for instance . . . where four 15-spindle MT Automatic Cop winders were recently installed and are turning out 53,000 pounds of cop wound yarn in 120 hours with 6 people . . . compared to 47,000 pounds with 14 people operating conventional cop winders! And with these savings: $6.90 saved per 1000 pounds! That's more than a narrow margin of savings!

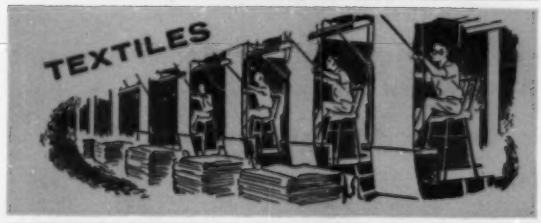
WRITE now for prices, references, information on how these savings with Schweiter can be applied to your business.

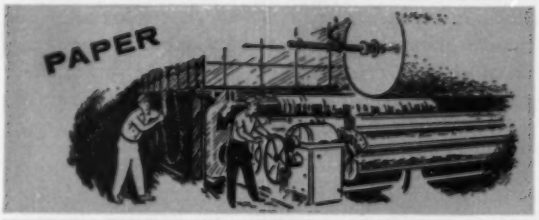
SAVE time and money with **THE SCHWEITER HOLLOW COP WINDER** — winds up to 18 inches length and 2 inches diameter.

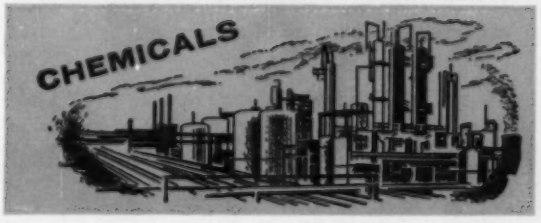
SCHWEITER LTD.
HORGEN (ZURICH) SWITZERLAND

Exclusive Agents for the United States and Canada
WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS

Heyden FORMALDEHYDE helps in Industry's BIG JOBS...







It is interesting to note that further growth is predicted for the major products made from Formaldehyde. This applies, for instance, to phenolic molding and laminating resins—urea and melamine resins for textiles, paper and plywood—and various organic chemicals.

Heyden Formaldehyde is helping in this growth, as it has right from the original development of these products. Experience, gained through this long association with customer problems, has enabled Heyden to meet the most exacting needs of each use. As new applications arise, Formaldehyde with the proper specifications will be available from Heyden.

Both methanol-inhibited (N.F.) and methanol-free forms of Formaldehyde are supplied by Heyden. If this chemical is one of your raw materials, why not discuss your requirements with the Heyden sales office nearest you.

•

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PARAFORMALDEHYDE

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CHEMICAL CORPORATION

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Benzaldehyde • Benzoic Acids • Benzyl Chloride • Beta-Oxynaphthoic Acid • Chlorotoluenes • Creosotes • Formaldehyde • Formic Acid • Guaiacols Parahydroxybenzoates • Pentaerythritols • Propyl Gallate • Resorcinol • Salicylates • Salicylic Acid • Sodium Benzoate • Sodium Formate

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100% PRODUCTION and NO SECONDS

...THE GOAL OF EVERY WEAVER

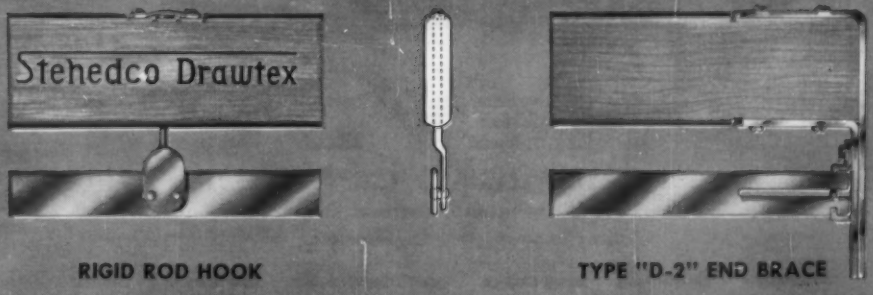
Take The Greatest Step Toward That Goal By Using Stehedco DRAWTEX HARNESS

- **Stehedco Drawtex Heddles and Frames are revolutionizing the textile industry with their efficient, trouble-free performance.**
- **They have proved themselves worthy of the Stehedco name by giving greatly increased production and higher quality goods.**
- **Many of the original Stehedco Drawtex Harnesses have been in constant use for over twenty years.**

The heddles are made of finest quality spring steel and highly polished to handle your most delicate yarns. Only Steel Heddle offers the patented rod slot hump, the shock absorber which is your insurance against heddle breakage. The exclusive spring effect guarantees quick and easy drawing-in by hand or machine. One heddle size can be used for a much wider range of yarn sizes and constructions, and every heddle is a repair heddle which can be added or removed at any position on the frame.

Frames are made of select fir lumber, straight and knot free. The new type D-2 end brace rigidly clamps the heddle rods so that there is no wear on either the brace or the rods, and yet the rods may easily be removed by slight pressure of a screwdriver to add or remove heddles.

The new rigid rod hook eliminates wear and need for replacement, and is easily adjusted with a screwdriver. It eliminates all warp streaks caused by the bunching of heddles at conventional type rod supports.



RIGID ROD HOOK

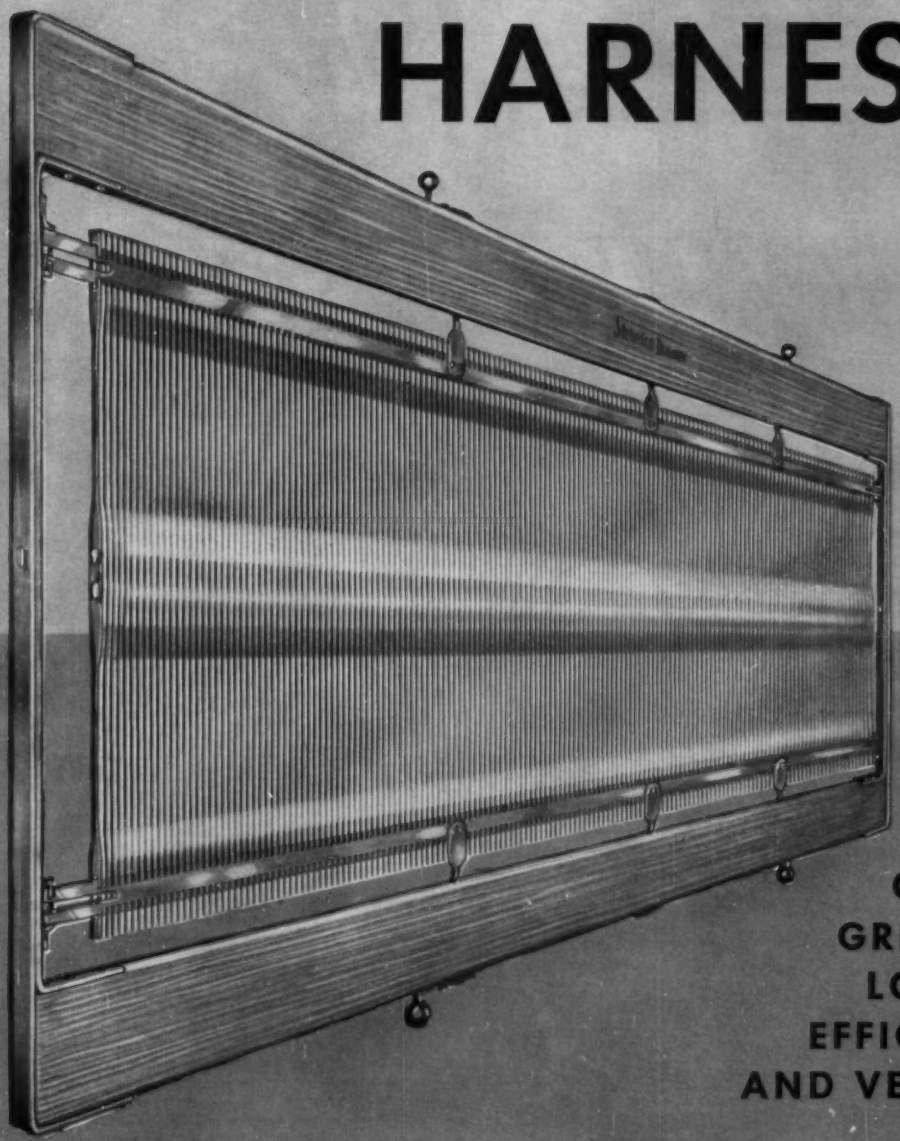
TYPE "D-2" END BRACE

YOU WILL PROFIT GREATLY BY INSTALLING STEHEDCO DRAWTEX HARNESS IN YOUR LOOMS

Ask our Field Engineers for Samples and additional Information about this Revolutionary Type of Harness.

Stehedco

DRAWTEX HARNESS



GET
GREATER
LOOM
EFFICIENCY
AND VERSATILITY

STEEL HEDDLE MFG. CO.

2100 WEST ALLEGHENY AVE. PHILADELPHIA 32, PENNSYLVANIA

ATLANTA, GA.—GREENSBORO, N.C.—GREENVILLE, S.C.—PROVIDENCE, R.I.—MONTREAL, CANADA

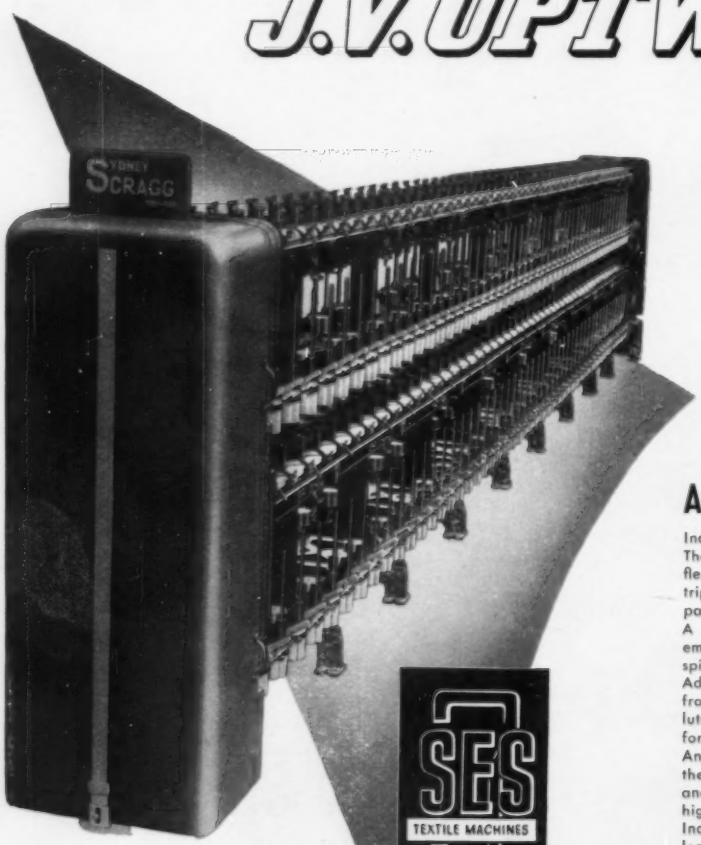
Salute to a new era . . .

Experience, foresight and enterprise have been combined to produce this latest addition to the SES range of Textile Machines. It heralds a new phase in uptwisting and sets a pattern of standardization which has been long overdue. Future trends have been anticipated, for it takes larger packages, an infinite variety of yarns and has speeds far in excess of present day standards.

Welcome then

THE SIDNEY & E. SCRAGG

J.V. UPTWISTER



A GALAXY OF NEW FEATURES

Including:—

The Mark II Super Heavy Duty Roller Bearing Sescoflex Spindle incorporating the virtually indestructible triple "Hycar" suspension system dealing with larger packages at higher speeds.

A new and unique constant belt pressure spring is employed which gives an unprecedented steadiness to the spindle under the most arduous conditions.

Additional strength has been built into the machine frame which has been further cross-braced, giving absolute rigidity, making it eminently suitable for the heaviest foreseeable packages.

An entirely new support structure has been adopted for the Traverse rails, making the Traverse the finest available and signifying a great advance in processing yarns at high speed while inserting low twists.

Individual drive to each deck. The motors are carried on long slides with a new positive self-adjusting belt-tensioning mechanism.

A new type non-lifting, roller bearing, light alloy jockey pulleys on hardened and ground nickel chrome spindles with large capacity oil reservoirs.

SES
TEXTILE MACHINES

SYDNEY & E. SCRAGG LIMITED

OXFORD ROAD WORKS, MACCLESFIELD

TELEGRAMS: 'PARKMIL' MACCLESFIELD, ENGLAND

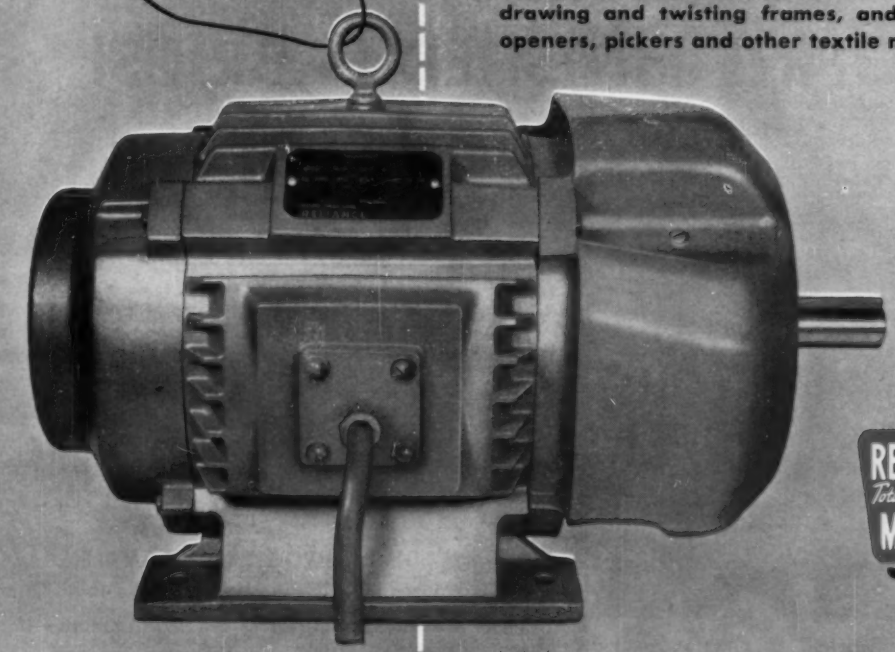
For more information, write direct or use Reader-Service post card.

MILL TESTED AND PROVED

THE FIRST LINT-PROOF TEXTILE MOTOR

- ELIMINATES MOTOR CLEANING COSTS
- SAVES SPACE—PERMITS UNDER FRAME MOUNTING
- TOTALLY-ENCLOSED—PREVENTS WATER DAMAGE
- REDUCES FIRE HAZARD
- FLEXIBLE DESIGN—ADAPTABLE TO ALL MACHINES

Now available—1-20 hp. general-purpose, totally-enclosed, air-cooled, textile motor for application on spinning, roving (low torque), drawing and twisting frames, and on cards, openers, pickers and other textile machines. B-1504

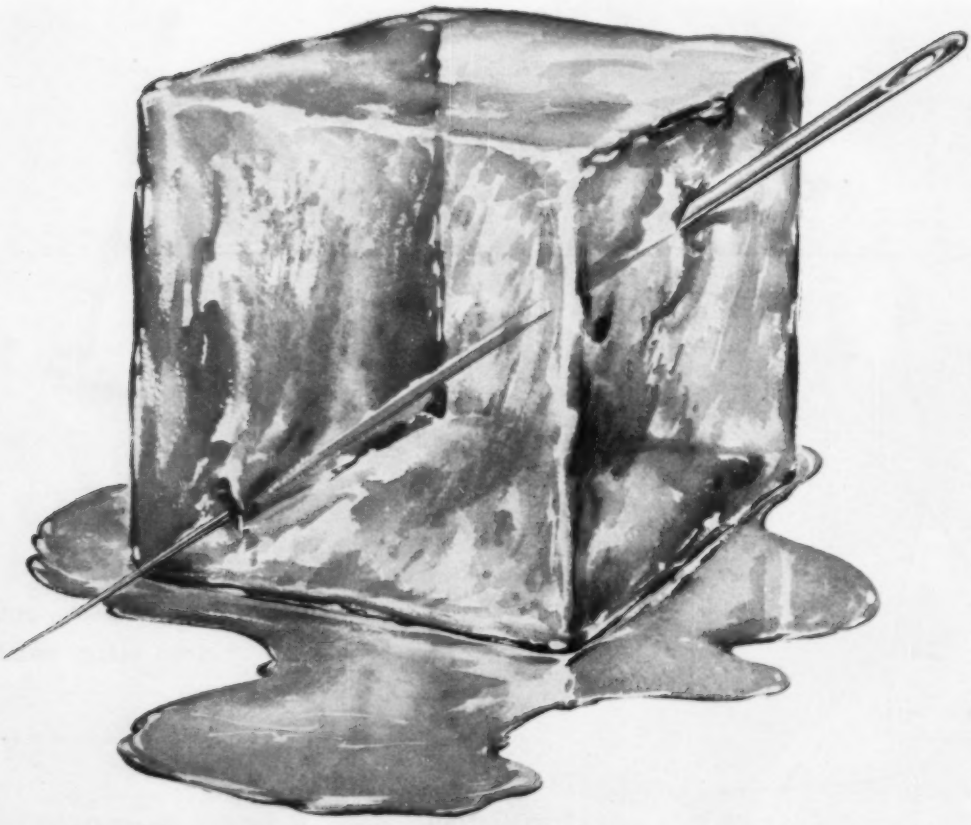


RELIANCE Totally-Protected MOTORS

RELIANCE ELECTRIC AND ENGINEERING CO.

Cleveland 10, Ohio • Offices in Principal Cities

Canadian Division: Welland, Ontario



NO NEEDLE BURN WHEN YOU SEW WITH

PROFINE-FINISHED FABRICS!

When you sew a Profine-finished fabric, you get protection an ice-cooled needle could not provide. Well-known finishing plants such as *North Carolina Finishing Company* use Profine to assure better sewability for their fabrics.

Profine is a quality finishing agent with some exceptional advantages:
It assures:
Cooler sewing...no needle burn.
Stronger seams.
Higher speed cutting.
Better abrasion resistance.
Faster Production.

It will pay you to specify Profine finishing for *your* threads or yarns or fabrics.

Profine

MADE BY PROCTER & GAMBLE
Textile Finishes Sales Dept. **Cincinnati, Ohio**

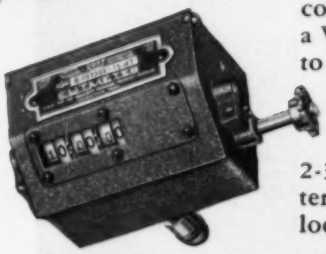
Makers of Olate, Proxols, Orvus and Kyro products — for smoother textile processing.

RECOMMENDED BY FIBER MANUFACTURERS • USED BY LEADING FINISHING PLANTS

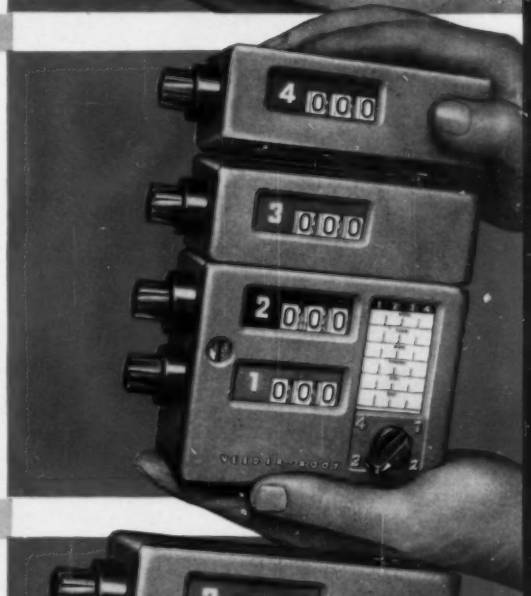
In Spinning...

New Veeder-Root 2-3-4 Convertible Hank Counters are easier to read, reset and maintain. And they are built to give you years of accurate facts-in-figures that help toward closer production *Count*rol.

Weaving...



Here's the combination to count on . . . *on every loom* . . . a Veeder-Root Cut Meter (left) to light a light or stop the loom at a pre-set woven yardage, *assuring uniform cuts of cloth* . . . and a new Veeder-Root 2-3-4 Convertible Pick Counter to keep accurate count of loom production on each shift.



Knitting...

For any type of knitting machine, Veeder-Root makes the counters you need to control your production. These new Revolution Counters, with the same advantages as the new 2-3-4 Convertible Hank and Pick Counters, can also be geared to record racks, or racks and tenths. In Fact, In Any Department of Any Type of Textile Mill . . .

VEEDER-ROOT

IS "THE NAME THAT COUNTS"

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GREENVILLE, S. C.
Box 297, Tel. Greenville 3-1371

AIM* for the best in production line packaging with new Acme Steel Strapping Machines

Acme Idea Man J. H. Scott Birmingham, Ala. helped Pepperell with this packaging idea

ask your *Acme Idea Man to help solve your problems

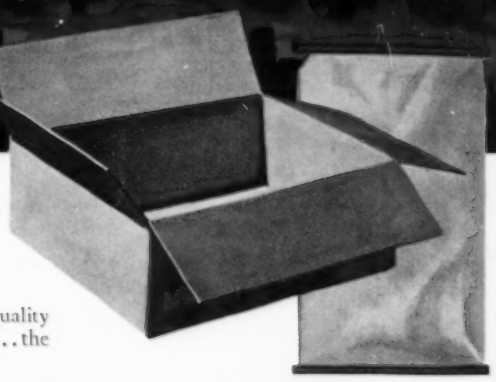
Pepperell Manufacturing Company, one of the country's leading textile manufacturers, is enjoying new production efficiencies and economies with this new Acme Steel F3 Automatic Strapper. (Idea No. 438.) *One* operation applies three straps simultaneously with the proper degree of compression, weighs and directs the flow of cartons on a motorized conveyor. Packages are uniform in appearance, straps are placed accurately, and because of uniform compression, they are easier to tier for warehousing. Contents of cartons are safe and secure . . . pilferage and shipping damage are minimized.

This is the type of progressive engineering and forward thinking your Acme Idea Man can offer you. Why not consult with him—let him analyze your present packaging and shipping methods? Call him at the nearest Acme Steel office, or write Acme Steel Products Division, Acme Steel Company, Dept. EE-36, 2840 Archer Avenue, Chicago 8, Illinois.

AIM *For Safe, Lower-Cost Shipping*

ACME STEEL

new horizons in **KRAFT** *packaging —*



WITH TOUGH-TEMPERED
FROSTKRAFT

FROSTKRAFT shipping containers and multiwall sacks are quality products made entirely from virgin fibers of the Southern Pine . . . the long, tough fibers preferred for maximum strength.

FROSTKRAFT quality typifies the Olin Mathieson Chemical Corporation's sixty years of leadership in cellulose chemistry, long experience in scientific packaging.

The know-how, experience and creative abilities of FROSTKRAFT engineers and designers are at your disposal. Our executives will be happy to help you reach the *right* solution — right away — to your kraft packaging problems.

FROSTKRAFT

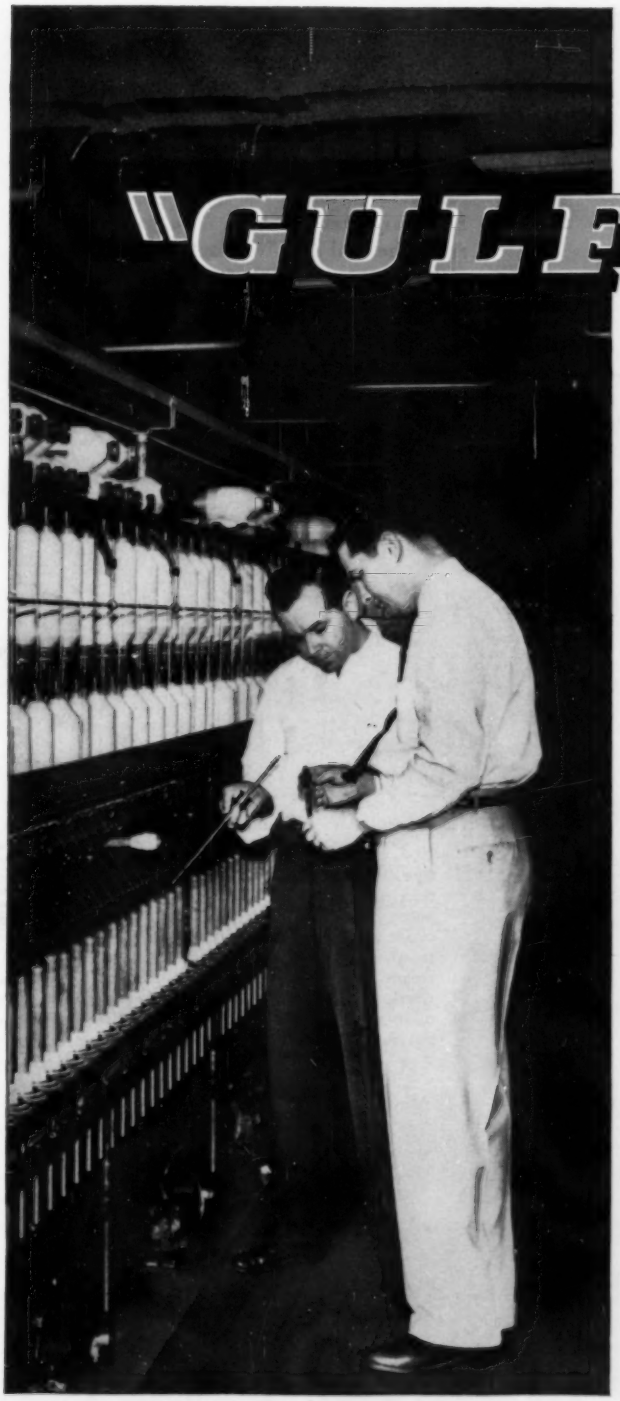
PAPER PRODUCTS

FOREST PRODUCTS DIVISION
OLIN MATHIESON CHEMICAL CORPORATION
WEST MONROE, LOUISIANA

Every new fiber developed brings to the textile plant both opportunities and problems. New physical characteristics of the fibers usually require changes in processing equipment. Hundreds of variations have been made in Herr Flyers to accommodate the new yarns. Many special Herr Conical Ring and Traveler combinations have been produced. If you have a spinning or twisting problem — Let us help you.

HERR Manufacturing Company, Inc.
309 Franklin St., Buffalo, N. Y.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES



"GULFSPIN keeps our spindles spinning clean and free,"

says...

W. M. LONG, superintendent
Rowan Cotton Mills Company,
Salisbury, North Carolina

"We have used Gulfspin for four years and have found that it almost entirely eliminates sticking spindles," says Mr. Long. "It also keeps sludge in suspension so that we do not have to pump our spindle bases as often."

In addition to the benefits cited by Mr. Long, Gulfspin also provides effective protection against rust and reduces power costs because of its ability to maintain its original viscosity after many months of service.

You'll find that the use of Gulfspin will contribute to smoother spindle operation, fewer ends down, and rock-bottom maintenance and power costs.

Contact a Gulf Sales Engineer and let him demonstrate Gulfspin's superiority on your frames. You'll find the number of your local Gulf office in the telephone directory.

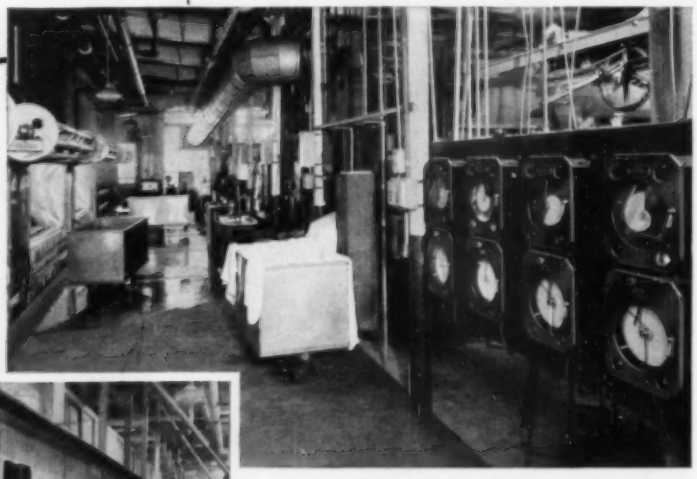
GULF OIL CORPORATION
GULF REFINING COMPANY
1822 GULF BUILDING
PITTSBURGH 30, PA.

GULF

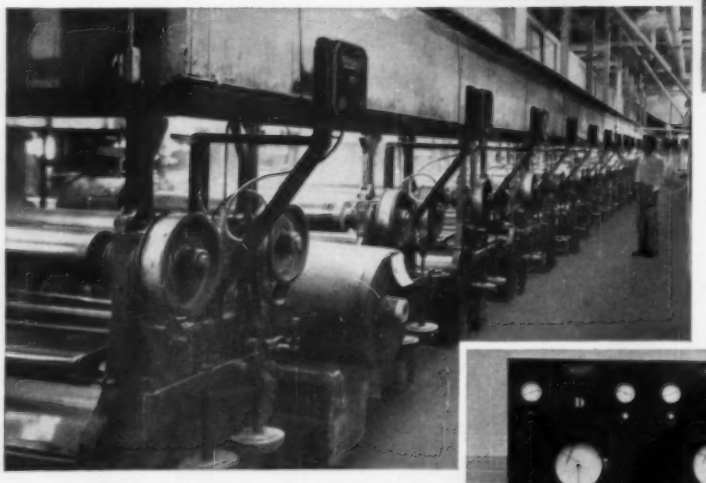
THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

3 examples of Taylor Control for Quality Dyeing!

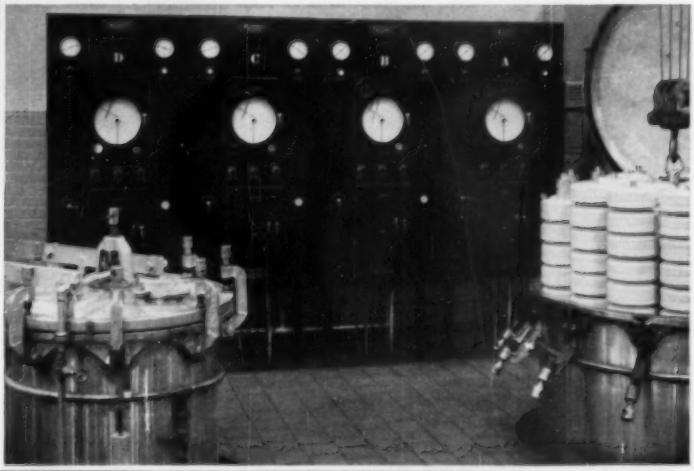
WHETHER you use Piece Dyeing, Jig Dyeing, Package Dyeing, Pressure Dyeing, Pad Dyeing or any type of wet finishing, a Taylor Control System will: **save steam; insure uniformity; cut down on reprocessing; increase production.** Your Taylor Field Engineer has a wealth of valuable experience behind him. Why not give him a call or, if you prefer, write Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.



Piece Dyeing of Synthetics calls for extremely precise control of temperature and dyeing cycles. The Taylor FULFLEX* Time Schedule Controllers shown here give fully automatic operation. There are no cams to cut—the operator simply sets three dials for *any* rate of rise, hold temperature and hold time and presses a button. Any part of the cycle can be repeated for additional rise and hold periods.



Dye Jig Operating Costs can be cut, and production and efficiency increased, with this Taylor automatic system. You get uniform dyeing, because the controller maintains uniform dye liquor temperature, regardless of wide variations in steam pressure in the header. Big steam savings result from automatic throttling control, which maintains an even temperature with no overpeaking.



On These Package Dyeing Machines both the temperature and time of the overall dyeing cycle are automatically regulated by Taylor FULSCOPE* Controllers and Process Timers. A dye liquor reversing valve, which gives a specific inside-out and outside-in cycle, is operated by a FLEX-O-TIMER* Time Cycle Controller. It precisely times flow reversal, assuring greater uniformity.

*Trade-Mark

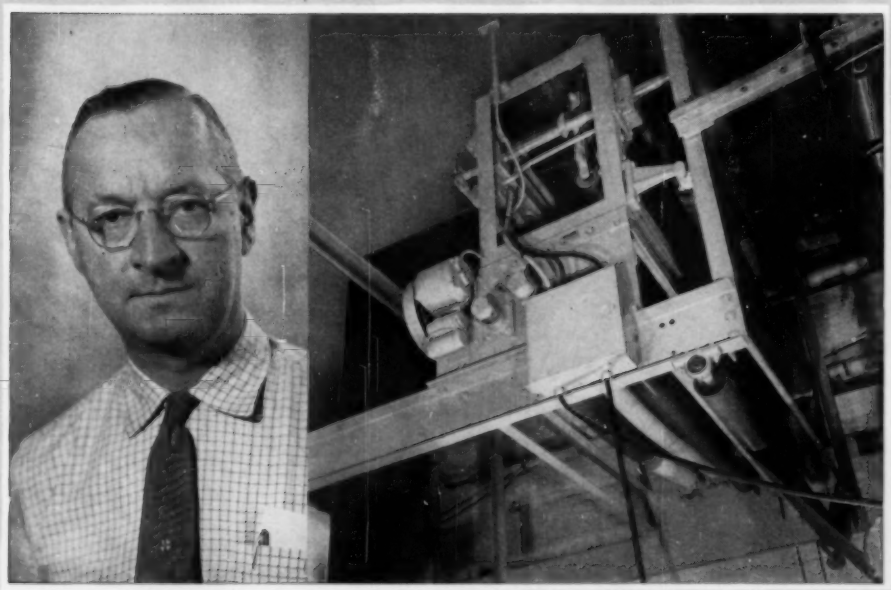
Taylor Instruments MEAN ACCURACY FIRST

Mount Hope SYSTEM

THE APPONAUG COMPANY TRAPS LOST PROFITS

with "the best equipment we ever installed"

says Frederick G. Brown, President



E. Wesley Adams

Shown above are Mount Hope Weft Straighteners, an integral part of the Mount Hope System installation at The Apponaug Company, Apponaug, R. I. Of these units the comment of W. Wesley Adams, Plant Engineer, is typical: "Operation of Mount Hope Weft Straighteners with push button control is so easy that handicapped workers, who otherwise might not be employed, become experts."

The Mount Hope System of coordinated cloth handling reduces costs throughout the entire finishing process. Production increases immediately, quality improves greatly, and seconds are cut to a profit-saving new low.

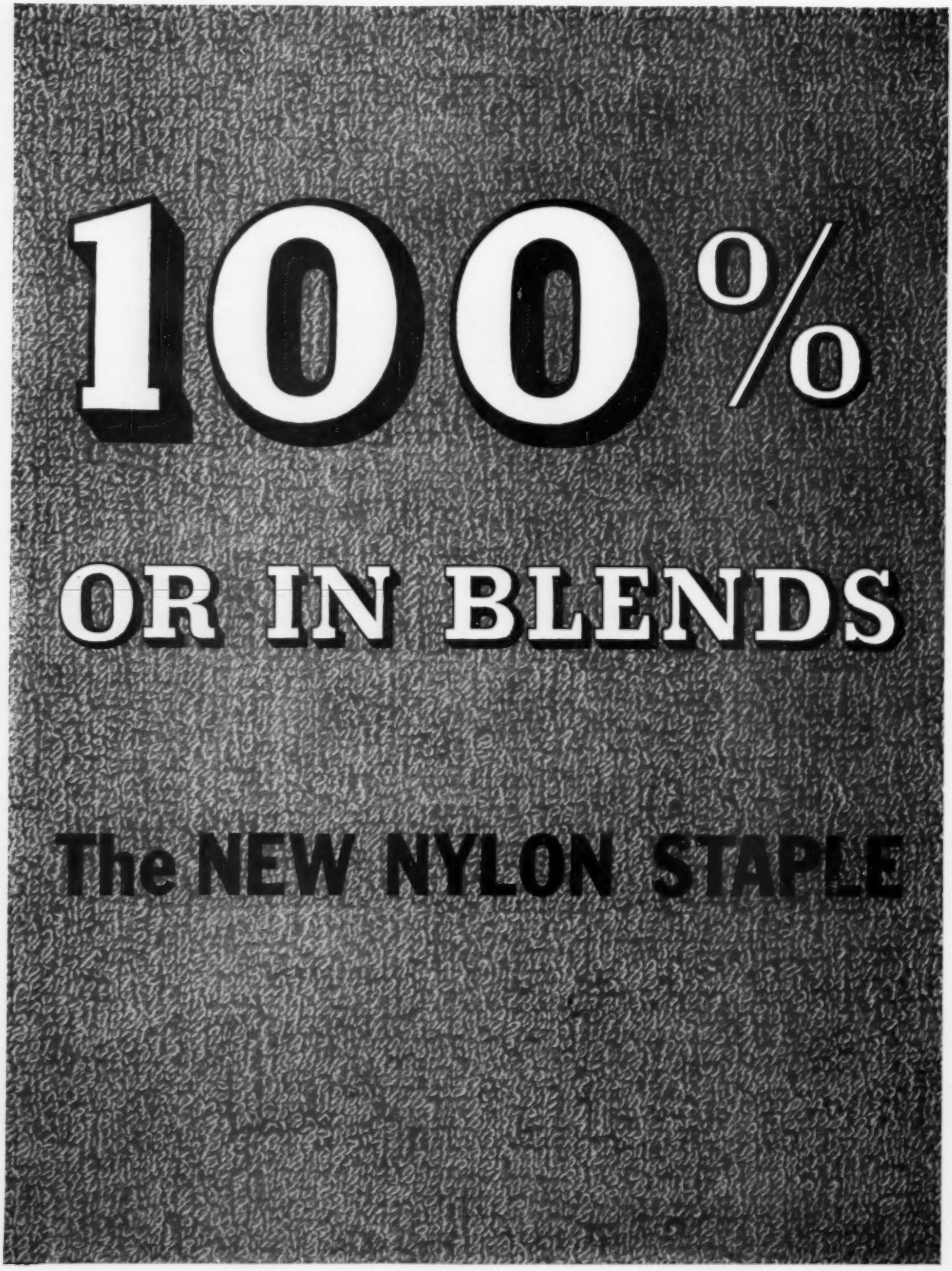
Originator of Modern Expanders—
Leader in Cloth Handling Equipment

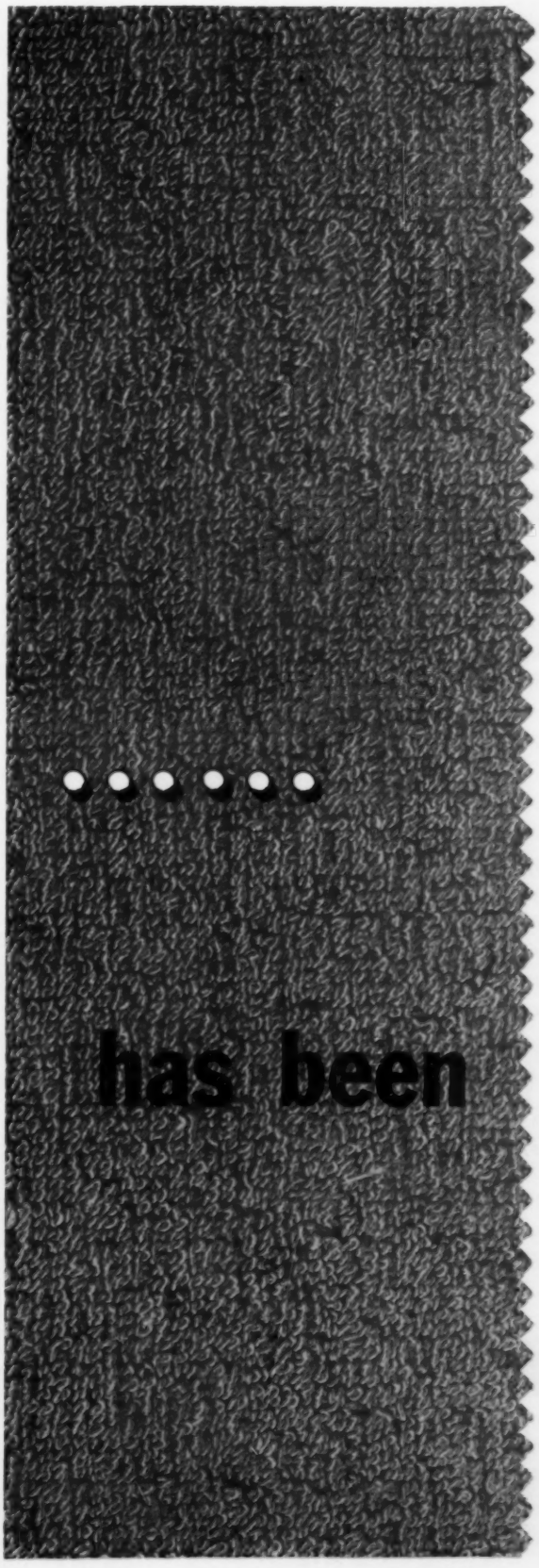
Southern Repair Shop - Charlotte, N. C.

Have a Mount Hope Production Cost Engineer survey your plant for lost profits. Write, phone or wire for complete information.

MOUNT HOPE
MACHINERY COMPANY

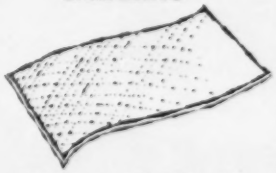
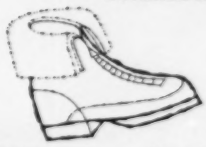
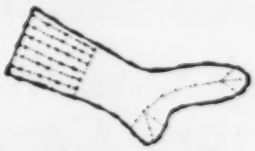
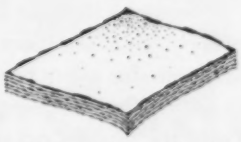
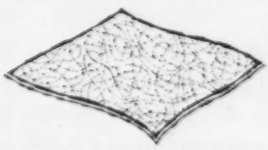
151 Fifth St., Taunton, Mass.


100%
OR IN BLENDS
The NEW NYLON STAPLE



has been

PROVED!

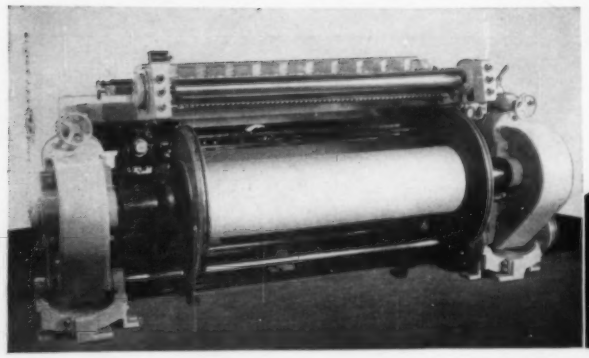
CARPETING*  100% and in blends	**STADIUM-BOOT INTERLINERS***  100% and in blends
UPHOLSTERY* 100% and in blends	**SOCKS***  100% and in blends
BONDED FABRICS*  100% and in blends	**NON-WOVEN FABRICS***  100% and in blends
INDUSTRIAL FABRICS* 100% and in blends	* The New Nylon Staple is currently being used in these industries...both 100% and in blends.

You, too, can put new life in your product
. . . bring new products to life with **THE BIG SEVEN**

- GREATER RESISTANCE TO ABRASION • BETTER CRIMP
- MORE RESILIENCY WITH LESS CRUSHABILITY
- BRIGHTER LUSTER • LOWER DYE COSTS
- NEW ECONOMY FOR YOU • GREATER STRENGTH

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Cleveland, Ohio
Sales Offices: 500 Fifth Avenue, New York 36, N. Y.
627 Guilford Bldg., Greensboro, N. C.



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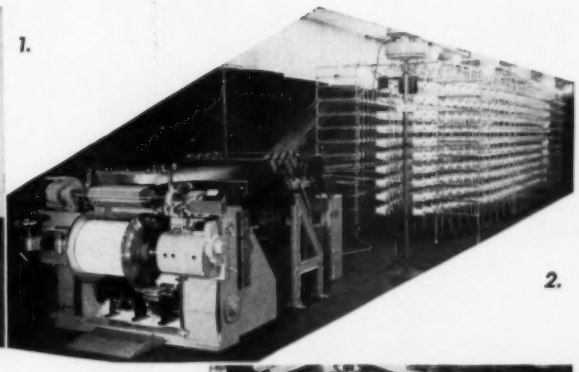
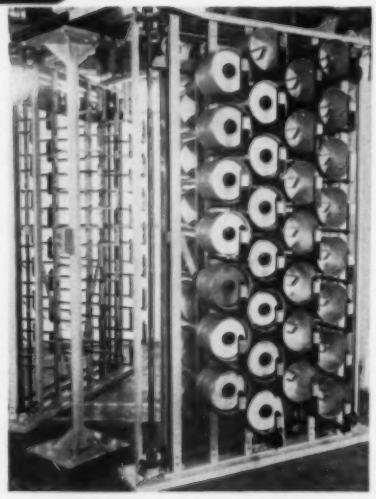


2.

For One Machine or a Complete Installation *You'll Do Better with Cocker*

Shown here are only five of the modern machines in Cocker's line—each the leader in its field. Cocker produces every piece of equipment you need for superior warp preparation—for every type of yarn. For over 40 years, Cocker has specialized on the designing and building of warp preparatory equipment and the name Cocker has become synonymous with the utmost in economy and efficiency.



3

Cocker Has Pioneered

Almost without exception, every valuable new feature on warp preparation equipment has appeared *first* on Cocker machines and has been incorporated in competitive equipment only after a lapse of several years. Even more important, no new feature introduced by Cocker has ever been discontinued because it failed to perform satisfactorily. Research by Cocker's engineering staff has often worked out new problems before the trade was fully aware of them.

Cocker Has Complete Manufacturing Facilities

Cocker maintains its own foundry, metal shop, and machine shop . . . and Cocker's own superintendents and shop foremen provide close supervision on every step in the production line.

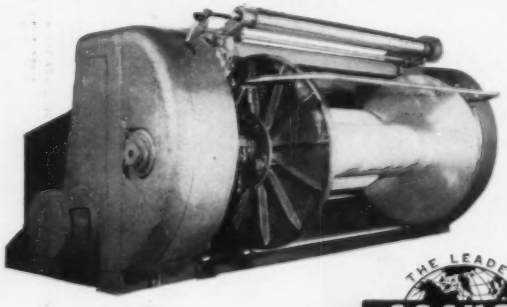
Shown here

1. **New 32" Rayon Warper**
2. **New 21" Tricot Warper**
3. **New Cheese Creel**
4. **New 40" Cotton Warper**
5. **All-New Combination Cocker All-Purpose Slasher**

Write, wire, or telephone for full information.

New England and Canadian Representative:

J. S. FALLOW & CO., 279 Union St., New Bedford, Mass.
4846 Sherbrooke St. W., Montreal, Canada



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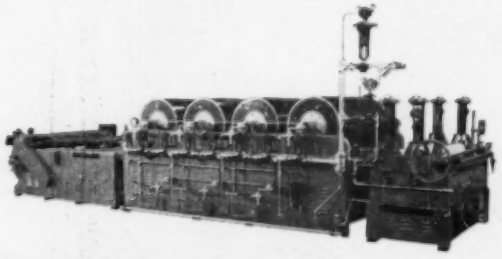


5.

THE LEADER AROUND THE WORLD

COCKER Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

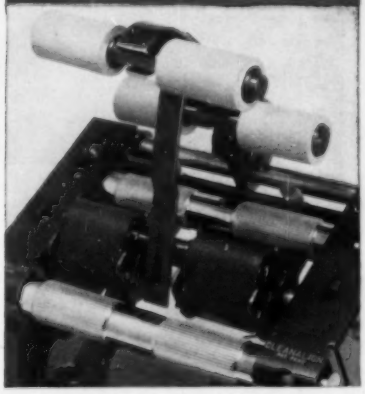
CLEANALIGN SADDLES have been specified in some of the world's largest mills . . . over 400,000 are now in daily use. Maintenance men know that **CLEANALIGN** saves money . . . increases production. Product Acceptance has been gained by Product Performance!

CleanAlign Saddles

PATENT PENDING

give you 5 Big Benefits!

NO CAP BARS
CLEANING AREA REDUCED 2/3's



Typical installation, above, shows *CleanAlign* Saddle in use with UNILINE Non-Lubricating Top Rolls in back and middle lines-and with CLIMAX Ball Bearing Top Rolls on front line. Rolls swing up for easy cleaning.

- **CleanAlign Saddles** require no lubrication . . . thus eliminating oiling expense;
- **CleanAlign Saddles** assure oil-free yarn — always . . . minimizing rejects, saving production costs;
- **CleanAlign Saddles** afford wide variety of weight distribution, quickly and easily changed;
- **CleanAlign Saddles** maintain rolls in perfect parallel alignment at all times;
- **CleanAlign Saddles** can be applied to practically any cotton spinning system.

These five big benefits assure top yarn quality, stable production, decreased costs, increased volume. Accrued savings from these operations pay for *CleanAlign* installations many times over — *average annual return 25%.*

for further information write or phone

PRODUCT SALES, INC.

21 VERNON STREET, WHITMAN, MASS.

ALSO SALES AND SERVICE OF CLIMAX and CLEANDRAFT TOP ROLLS

Complete Service Facilities and Staff Located Strategically for Immediate Action, as Follows:—

SHOPS: Whitman, Mass. and Greenville, S. C.

J. H. **CANADY**, 3344 LeBron Avenue, Montgomery, Ala., serving Ala., Miss., Ga., La., Ark., Tex., Okla., Tenn.

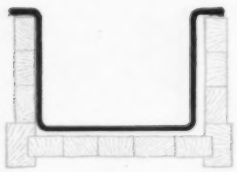
DUDLEY DUNLOP, Product Sales, Inc., 3239 Fairfax Drive, Charlotte, N. C., serving South Carolina

RAYMOND L. McCAULEY, 3020 Manor Road, Charlotte, N. C., serving Virginia, No. Carolina.

FOR EUROPEAN SERVICE:
VICTOR BEECROFT, 54 Boroughgate, Otley, Yorkshire, England

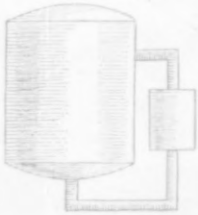
Foreign Agents In The Principal Textile Centers Of The World

1929



Stainless steel was first used by textile mills as linings for dye vats. It reduced maintenance and boiling-out time so much that . . .

1935



. . . by the middle thirties, it was used in all kinds of related equipment. And in kiers and other equipment, where strength and cleaning ease were as important as corrosion resistance, stainless found wide use. And now . . .

1956

. . . stainless steel cuts costs in everything from dye house to loom — in finishing, fabric preparation, weaving, knitting, yarn preparation and manufacture.

Crucible stainless types most frequently applied to Textile Applications

STAINLESS TYPE	NOMINAL % Cr	Ni	Other	USED FOR
302	18	8		GENERAL PURPOSE
303	18	8	S	FREE MACHINING
304	19	9	Low C	WELDING
309	25	12		HIGH TEMPERATURE
310	25	20		HIGHER TEMPERATURE
316	18	12	Mo	HIGH CORROSION RES.
317	19	13	Mo	HIGHER COR. RES.
318	18	12	Mo, Cb	WELDING (Stabilized)
321	18	8	Ti	WELDING (Stabilized)
347	18	8	Cb	WELDING (Stabilized)

for tomorrow, too, see why no material can cut your costs like stainless steel

Stainless steel offsets *brutally-hard usage* with exceptional toughness and strength . . . combats *biting dyes and acids* with remarkable cleanability and corrosion resistance . . . prevents *metallic pickup* through its chemical inertness in the dye vat — here again with corrosion resistance. That's why stainless steel is no luxury metal, but *the least expensive material you can buy.*

Whether you're redesigning an old process, or setting up a new one, your Crucible representative can show you how to use stainless to best advantage. In either case, you'll want to see the over-all picture first, so write for your complimentary copy of the 32-page, illustrated booklet, "Making the Most of Stainless Steel in the Textile Industry." *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

For more information, write direct or use Reader-Service post card.

"Fresh from the mill!"

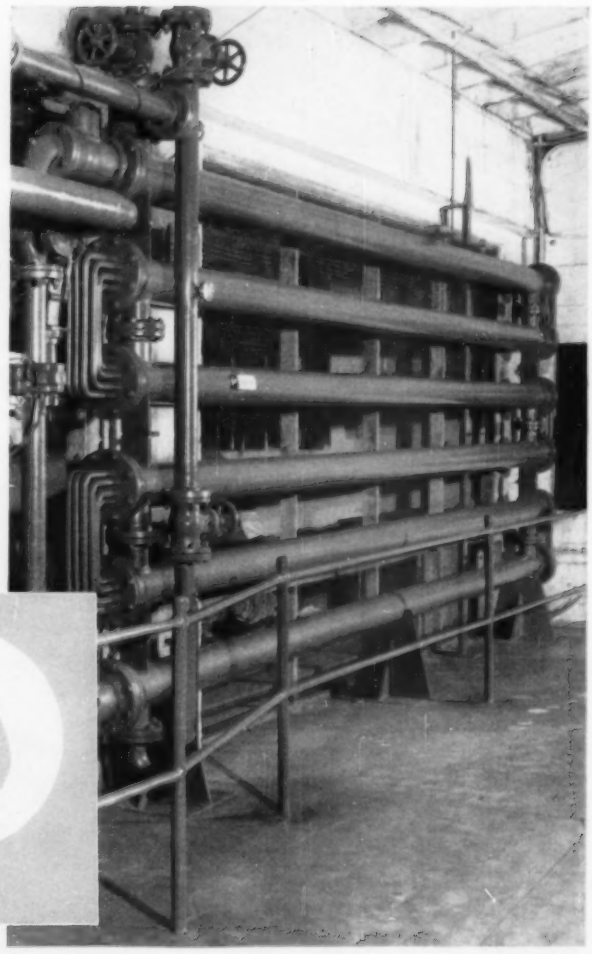
These H & D corrugated shippers double as storage-dispensing bins... keep yarns clean and orderly during and after shipment. Ask H & D to help improve your packaging, too.

HINDE & DAUCH

Subsidiary of West Virginia Pulp and Paper Company

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
13 FACTORIES • 42 SALES OFFICES

When your boiler's overloaded . . . a Bready System of Waste Heat Recovery is your ace in the hole



RELIEVING excess boiler loads is only one of many jobs that Bready Systems of Heat Recovery from waste water are being called on to do. When a plant is faced with boiler difficulties, installing a Bready System is like having an "ace in the hole" that pays off by giving the plant the necessary capacity of a new boiler but without its increased fuel requirements, and at much less capital investment. At the same time, the Bready System will reduce the amount of fuel required by the present boiler.

Above and beyond these advantages, a Bready System balances the hot water system by normalizing flow rates. High volume hot water is also uniformly supplied at specific temperatures and fill time is greatly reduced. Maintenance is at a minimum—cleaning of the system is automatic!

Get all the facts on a Bready System as it applies to your plant. Write, wire or phone for complete details, or a free plant survey.

Ludell *Manufacturing Company*

5200 WEST STATE STREET • DEPT. TW • MILWAUKEE 8, WISCONSIN

MANUFACTURERS OF BREADY SYSTEMS OF WASTE HEAT RECOVERY

For more information, write direct or use Reader-Service post card.

Naugatuck Lotols
boost upholstery fabric values!

BACK-SIZING modern upholstery fabrics with just the *right* formulation of rubber or rubber-and-plastic latex adds value to the fabric out of all proportion to its meager cost. Specifically, it—

- **Anchors the weave, twist or pile**
- **Eliminates raveling of cut edges**
- **Improves body and hand**
- **Minimizes water spotting**
- **Prolongs wear**
- **Maintains dimensional stability**

Leading upholstery manufacturers depend on Naugatuck's tailored-to-order latex compounds to give their fabrics added value, aesthetically as well as physically!

Such a latex, custom-compounded in ready-to-use form by Naugatuck, is sold under the trade name LOTOL. And behind every LOTOL® is the know-how that belongs to the world's leading latex producer and compounder, plus the facilities of *three* modern compounding plants strategically located at Gastonia, Naugatuck and Los Angeles to save you shipping time and expense.

SEE – Naugatuck Chemical Division, United States Rubber Company, at work on NBC's "Color Spread" TV spectacular, Sunday, March 25, 7:30 PM, EST.

US RUBBER

United States Rubber

Naugatuck Chemical Division

Naugatuck, Connecticut

BRANCHES: Akron • Boston • Chicago • Memphis • New York • Phila. • Mfg.: Los Angeles • Gastonia • Naugatuck • CANADA: Naugatuck Chemicals, Elmira, Ont.
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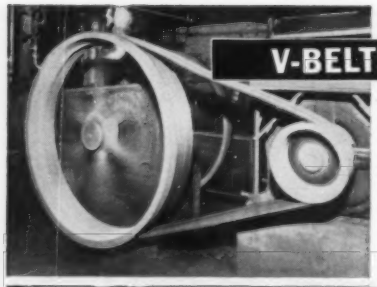
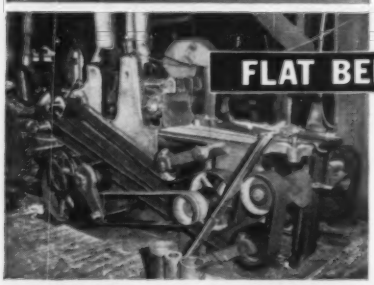
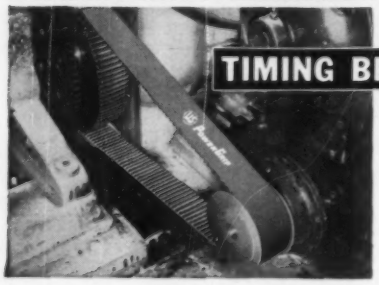
A complete line of

Flat Belts, V-Belts and Sheaves and "TIMING"® Belts and Pulleys



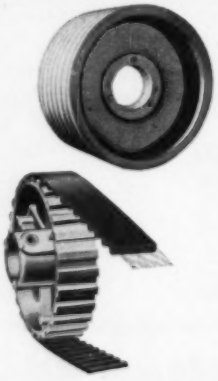




• Whatever your power transmission requirements, "U. S." can supply them. With "U. S." distributors and warehouses strategically located across the country, you are assured of immediate *service* and shipment.

U. S. Rubber power transmission technicians are always ready to help you. Get in touch with one of our selected distributors or any of our 27 District Sales Offices or write us at Rockefeller Center, New York 20, N. Y.

MULTIPLE V-BELTS • F.H.P. V-BELTS
SHEAVES • FLAT BELTS AND BELTING
SPECIAL PURPOSE BELTS
PowerGrip **"TIMING" BELTS AND PULLEYS**



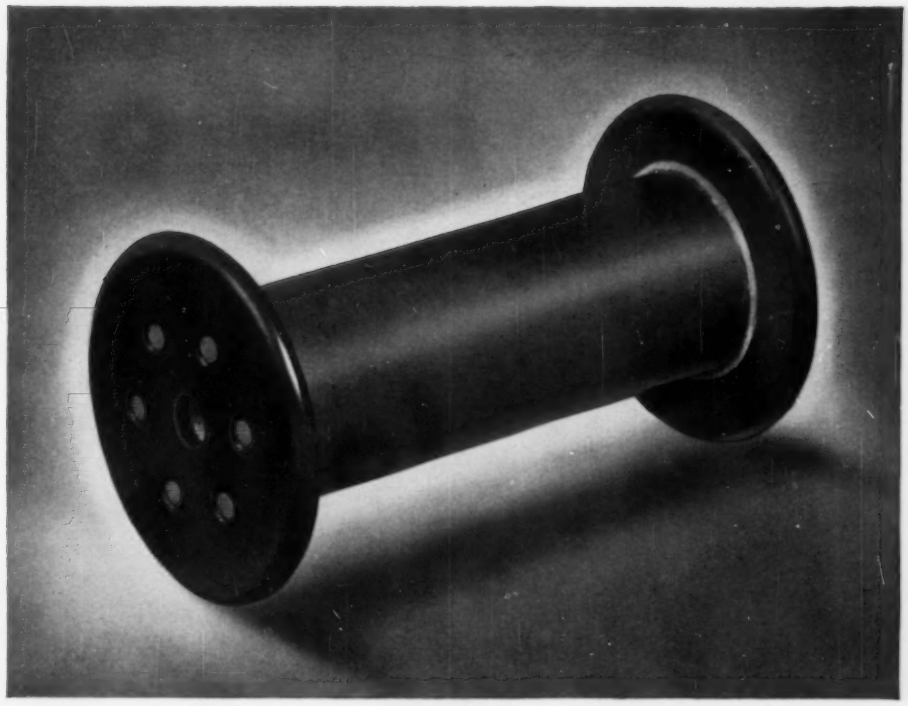
V-Belt Sheaves and "TIMING" Belt Pulleys

are tested for static balance and engineered to deliver the high durability and efficiency that are built into every "U. S." Belt.

Mechanical Goods Division

United States Rubber

For more information, write direct or use Reader-Service post card.



For smooth-finish, wear-resistant bobbins

...use Taylor Fibre and Laminates

Bobbin heads with high impact strength, smooth finish and excellent wear resistance are made from Taylor Grade LLL laminated plastic or Taylor Bobbin Fibre. Both are easy and economical to machine and punch. Together they afford a good range of strength and wearing properties to cover nearly any bobbin application.

Bobbin spools use the smoothness, high strength and stability of Taylor Grade XX laminated plastic tubing. A non-bleeding material, in steaming or setting operations. Tubes come in outside diameters from 3/16" to 20" . . . turned, sanded or ground finishes available.

Taylor manufactures no finished products for mill use . . . but specializes solely in production of materials for equipment manufacturers. A broad variety of vulcanized fibre and laminated plastics, in sheet, tube and rod forms for economical production, is ready to serve your requirements.

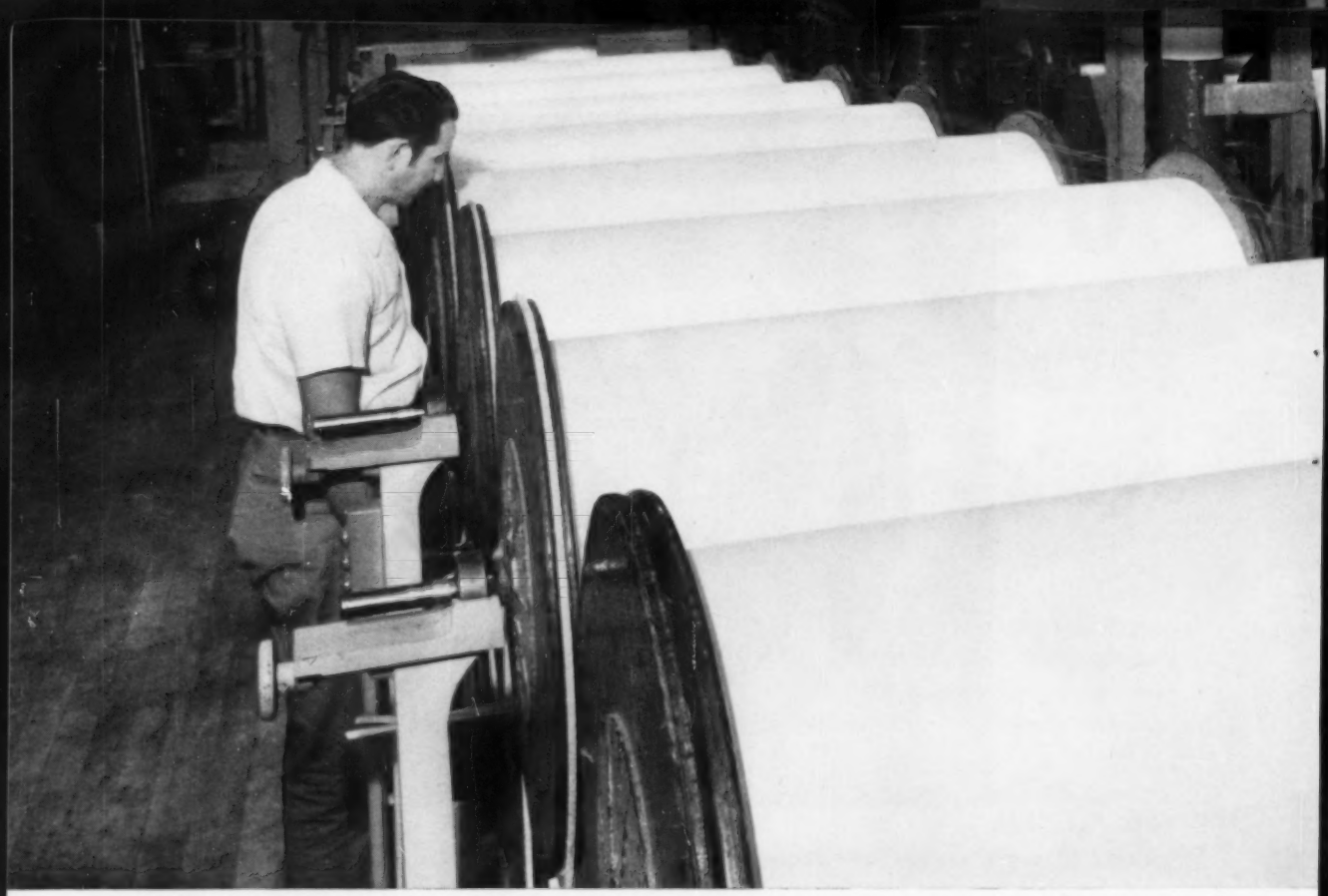
In shuttles, sizing bobbins, spinning bobbins, package tubes, bearing blocks and cam followers, these materials add extra value in performance . . . extra savings in production. Specify Taylor materials for the equipment you manufacture, and make sure that Taylor materials are used in the equipment you buy for your mill.

TAYLOR FIBRE CO.—Plants at Norristown, Pa.—La Verne, Calif.

Call on Taylor for Materials Application Engineering

Specialists on Taylor's engineering staff are well qualified to help solve materials problems for textile equipment manufacturers. They will analyze your specific application and help you select and apply the most effective and economical grades of Taylor materials. For a consultation, write or call your nearest Taylor office.

TAYLOR
Laminated Plastics
Vulcanized Fibre

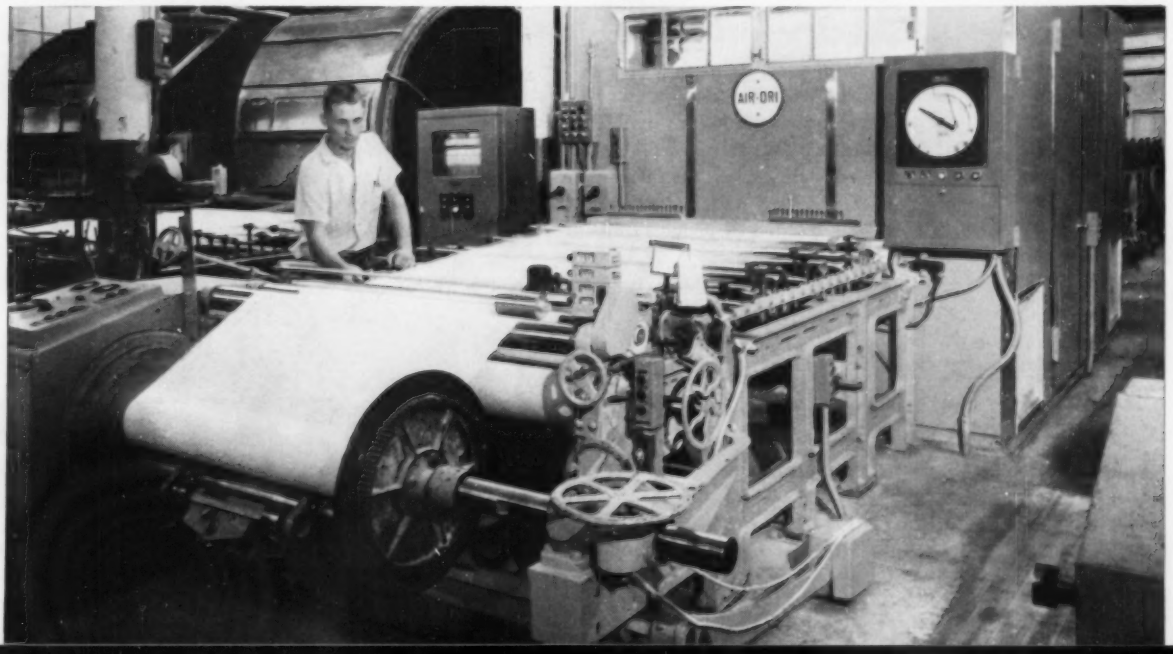


CONSTANT YARN TENSION IS MAINTAINED AUTOMATICALLY from empty to full beam by means of the amplistat tension regulator. Conveniently located creep-speed rheostat permits operator to set creep speed to the desired value without calling for the electrician regardless of changes in yarn, creel beams and tensions which might affect speed. Above is the

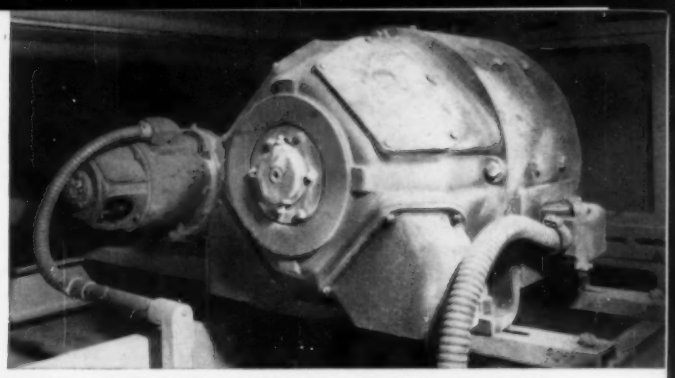
New slasher and GENERAL ELECTRIC DRIVE combination help

Springs Cotton Mills Reach Output

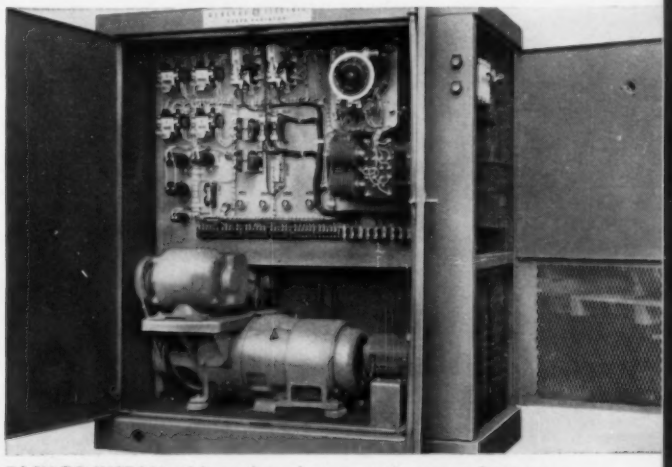
MAXIMUM SPEED OPERATION, consistent with the drying rate, is made possible by automatic operation with a moisture controller. Springs Mills operators report the drive is very easy to run and less complicated than other slasher drives.



creel end of the new G-E Speed Variator slasher drive installed at Springs Cotton Mills, Kershaw Plant. The amplistat eliminates "feel" and guesswork, assures smooth operation.



MAIN BEAMER DRIVE MOTOR for new slasher is rated at 5 horsepower. A booster generator gives extra power to the beamer motor to assure good performance at low speed and acceleration without change in yarn tension.



EASY TO INSTALL, this packaged power unit comes factory-assembled, wired and tested, needs only to be bolted down and connected to the drive motors.

Figures of 50% More Yards per Minute

At the Kershaw, South Carolina Plant of Springs Cotton Mills a new slasher and G-E amplistat-controlled drive combination has helped Springs reach output figures of 50% more yards per minute. Amplistat tension control in the new Speed Variator drive maintains constant yarn tension from empty to full beam. The result is a greater amount of yarn wound on each beam. Handling and loom down-time for changing beams are reduced . . . production increased.

SMOOTH, STEADY OPERATION—Springs Cotton Mills reports drive is very simple and easy to operate. A dial setting provides for stepless adjustment of beaming tension over a wide range to suit yarn sizes and number of ends. The amplistat maintains settings automatically. It eliminates "feel" and guesswork, assures steady, smooth handling of material.

MINIMUM MAINTENANCE The amplistat, a static magnetic amplifier, has no moving parts and is built for rugged, long-life service. The power unit is protected by glass fiber filters and a positive-pressurized cabinet which forces air leakage in an outward direction. Unit is kept virtually lint and dirt-free. As a result, maintenance is low.

COMPACT POWER UNIT Already assembled, wired and tested, the compact Speed Variator power unit houses the m-g set, controls and panel-mounted amplistat. It needs only to be bolted down and connected to the drive motors. No special mounting bases or foundations are required. The unit may be moved easily to meet conversion or expansion.

HOW YOU BENEFIT A G-E specialist will be glad to show how your plant may benefit from this new drive. Contact the nearest G-E apparatus sales office or write for bulletin GEA-6368. *Direct Current Motor and Generator Department, General Electric Co., Erie, Pennsylvania.* 819-1

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GENERAL ELECTRIC

you specify

with

Confidence

when you choose

Airtemp air conditioning

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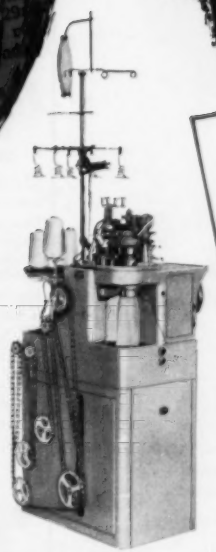

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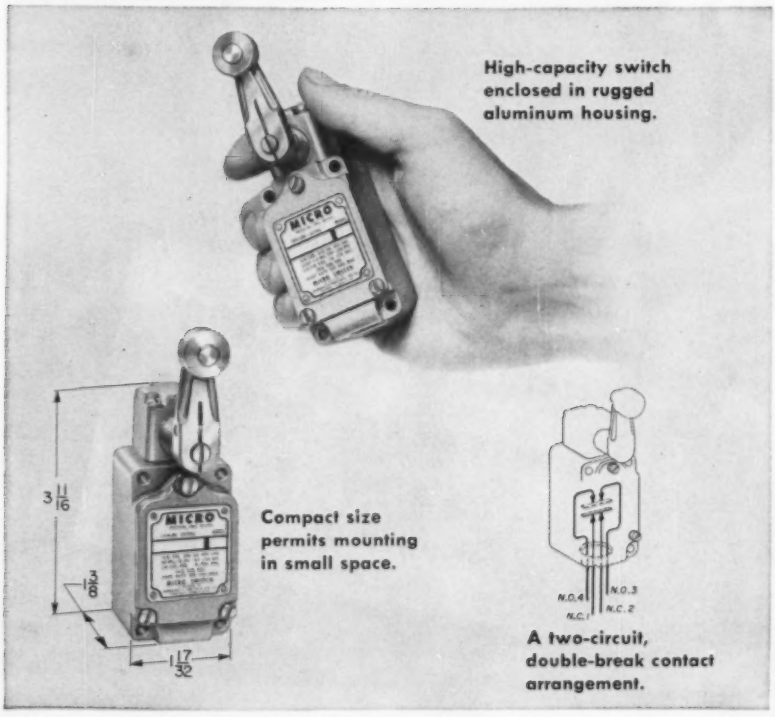
MICRO precision switches

...THEIR USE IS A PRINCIPLE OF GOOD DESIGN


High-capacity switch enclosed in rugged aluminum housing.
Compact size permits mounting in small space.
A two-circuit, double-break contact arrangement.

Here is a compact 2-circuit switch to meet a wide variety of textile applications

This MICRO precision switch is designed to meet every requirement for a compact 2-circuit switch for use as a limit, safety or interlock switch on many textile machines.

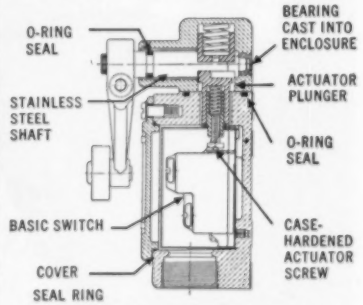
It has small size, extreme versatility, precision, reliability and ruggedness. All moving parts and the switching chamber are completely sealed, protected from wear or becoming fouled. Field adjustability permits its use in practically any type of application or location.

Two-circuit contact arrangement allows flexibility in circuit design. Reliability of the precision, snap-action unit assures accurate repeat operations throughout many millions of hard, fast actuations. Although small and compact in size, this switch is not only a precision instrument. It is designed and built to stand the most severe abuse.

The electrical rating is: 10 amperes 120, 240 or 480 volts a-c; ½ H.P. 115 volts a-c; 1 H.P. 230 volts a-c; .2 ampere 115 volts d-c; .1 ampere 230 volts d-c; .04 ampere 550 volts d-c. Pilot duty rating is: 600 volts a-c, max.

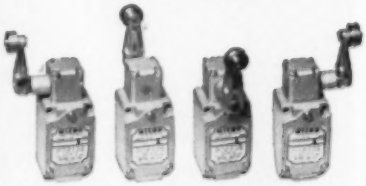
Like many other precision switches in the MICRO SWITCH line, this versatile 2-circuit switch is an ideal component for installation on present textile equipment. MICRO precision switches make machinery safer, more automatic and more productive in many progressive mills.

Seals Provide Maximum Protection



Sealing is provided by use of O-ring seals on the actuator shaft and between the actuator head and the housing. A synthetic rubber ring seal is provided for the cover. These seals provide maximum protection against entrance of dust, oil and other liquids. The switch meets NEMA specifications for an oil-tight pilot device.

Adjustable Head Assembly

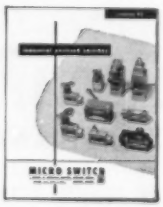


The switch is easily mounted in almost any location. The user can remove the head and locate it in any of 4 positions (as illustrated).

Field Adjustable Actuator

The roller arm actuator is field adjustable through 360 degrees, positively locking in any position. Actuators are assembled to operate in either direction. They can also be converted to operate in one direction only, clockwise or counterclockwise

Send for new catalog 83 on industrial enclosed switches.



MICRO precision switches are sold by distributors in key cities everywhere. Look under "Switches, Electric" in the yellow pages of your phone book.

MICRO SWITCH

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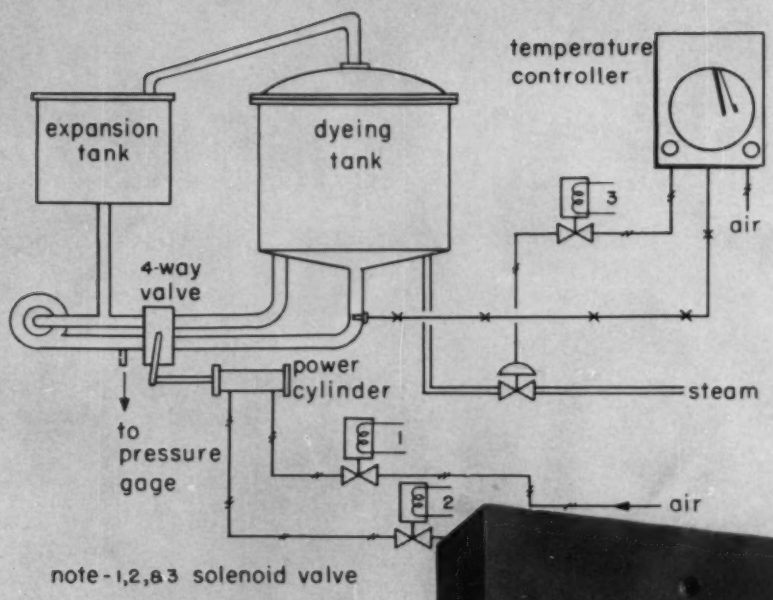

On a single compact panel, this Honeywell control system gives fully automatic control of any dye kettle. Equipment is factory-mounted, wired, and piped . . . shipped to you as a "package."

dyeing costs LESS—

when Honeywell "packaged" systems control your kettles

WANT TO get consistent colors, at peak output, from your dyeing kettles? It's a cinch, when you have Honeywell Dye Kettle Control Systems working for you.

Just set the controls for the dyeing cycle you want. Then press a button. The control system does the rest. It brings the kettle up to exact temperature, and holds it there for the complete cycle. It automatically reverses flow. At the end of the preset time period, it shuts off steam and actuates a signal to let the operator know the kettle is ready to unload.

This control eliminates guesswork and possibility of human error. It frees the operator for other duties while the cycle is in operation. And it watches over every step every instant . . . providing much closer regulation than even the most careful operator could do manually.

But this is only part of the story. Full control of the entire cycle lets you duplicate dyeing operations accurately from batch to batch. You get consistent dyeing and thorough penetration through each bobbin in the charge.

The equipment can be used with any kettle. It's easy and inexpensive to install. You make only a few simple connections to readily accessible terminals. And when you want service, a call to any of the more than 100 Honeywell offices will bring prompt action by factory-trained technicians.

Your local Honeywell sales engineer will be glad to discuss how this control system can be applied to new dyeing equipment that you are planning to install, or to kettles now working in your mill. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

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MINNEAPOLIS **Honeywell**

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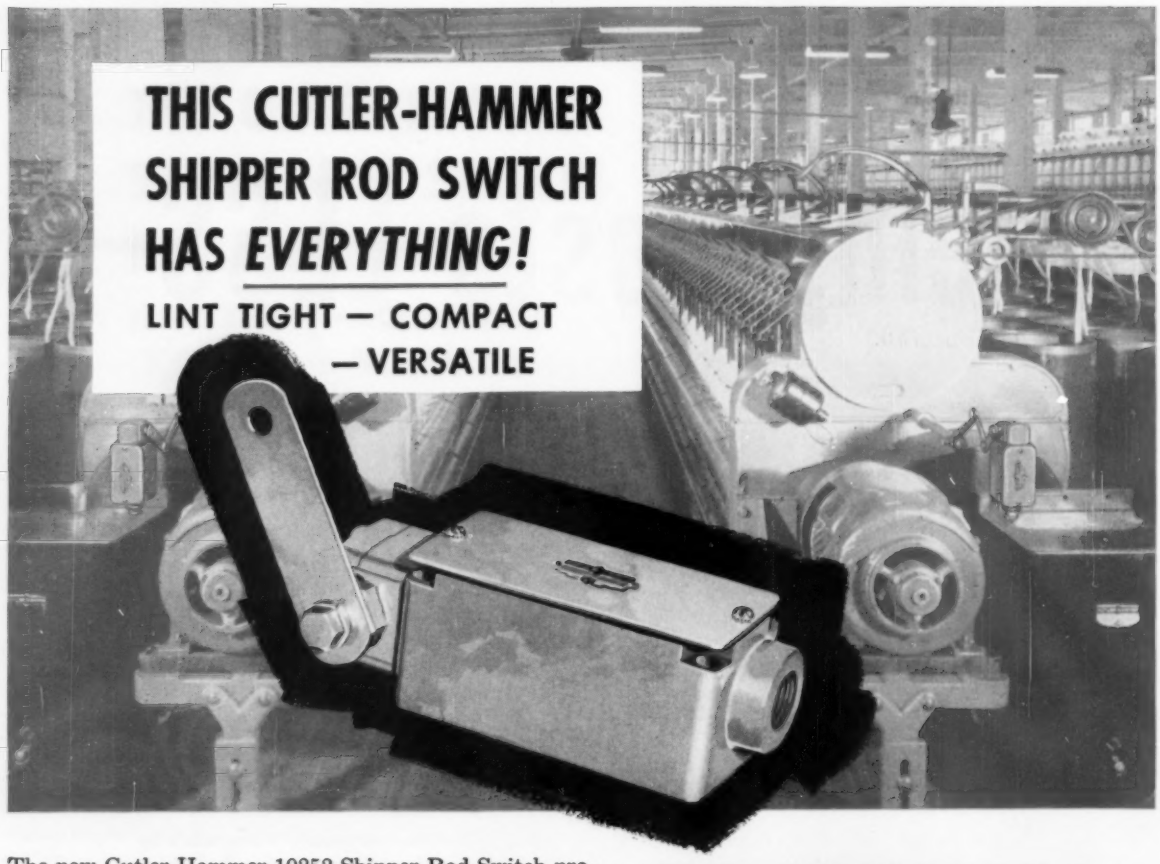
First in Controls



THIS CUTLER-HAMMER SHIPPER ROD SWITCH HAS *EVERYTHING!*

LINT TIGHT — COMPACT — VERSATILE

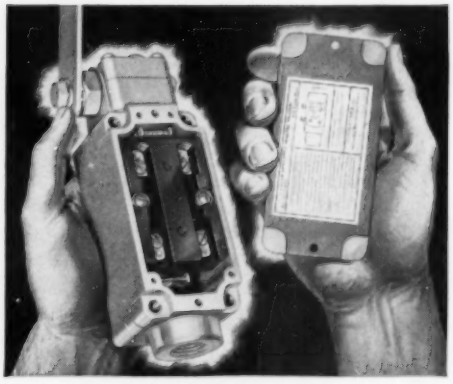
The new Cutler-Hammer 10252 Shipper Rod Switch provides every feature the textile industry wants. It's *fully* lint tight. It's *amazingly* compact. It's *really* versatile . . . and here's why.

LINT TIGHT—Lint, the big enemy of textile machines and control, is locked out of the 10252. Check these features of construction: 1. heavy die cast enclosure; 2. threaded conduit opening; 3. external mounting holes; and 4. heavy gasketed cover.

COMPACT—Small enough to fit in the palm of your hand, but big in performance. Large heavy duty butt type contacts and a sturdy mechanical mechanism assures years of dependable economical operation. Isolation of the electrical and mechanical mechanisms prevent the wires from "jamming" the switch mechanism.

VERSATILE—The 10252's mounting versatility cuts installation costs to a minimum. Here is a shipper rod switch which you can mount in any position, rotate the lever head to the correct motion plane, select either clockwise or counter-clockwise lever action without altering the switch mechanism, and accurately position the lever for precise operator "feel" and "pin-point" jogging.

The unique double contact design provides both positive motor starting and low voltage protection. The snap action closing of the first contact starts the motor. The second contact is pneumatically delayed to open to provide the low voltage protection. The delay period allows the motor starter interlock to pick up and maintain the circuit. Order your new C-H 10252 Shipper Rod Switch from your Authorized Cutler-Hammer Distributor today. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.



The perfect shipper rod switch *for roving frames—drawing frames—combers—narrow fabric looms—carpet looms.*

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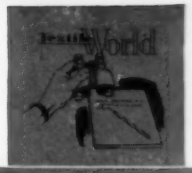


The LONG-RANGE VIEW

"This Is Election Year"

This year being an election year, people have already begun to feel their usual premonitions about the effects of the election on business. Business experts advise: "This is election year. Be careful." And sidewalk financiers say: "Times are bound to be bad. This is election year."

Personally, we always have this business-is-bound-to-be-bad feeling every year of a presidential election. But when we stop to think of it, the premonition turns out to be the voices of our father and grandfather. So we have to wonder if their sage observations about business and politics hold true (if they ever did) in this day when the economy is so different and politics has swung sharply away from the paths of our grandfather's time.

It Started Last Century

According to a report by the McGraw-Hill Economics Dept., the notion that business will fall off in an election year can be traced back to late last century, to at least the 1880s. It might have started even before that. In those days, the Democrats were decidedly a low-tariff party and the Republicans a high-tariff party; and business was extremely sensitive to tariff protection and foreign competition.

Also at that time, Bryan was whooping it up for free coinage of silver; and the money boys, and therefore business, shivered and shuddered at the thought of an election that might turn the reins over to Bryan.

To add fuel to the fire, there were depressions in 1884 and 1896, both election years.

Chances are that our grandfather picked up his notion that an election year is bad for business during those years and passed it on to our father, who must have been just learning what the words "politics" and "business" meant. And here we are in 1956 still bothered by a premonition that easily could be mistaken for "native wisdom."

It Kept Going

The report says that the idea of bad business in an election year kept going full steam until the 1932 election. Arthur F. Burns, now chairman of President Eisenhower's Council of Economic Advisers, wrote in the *New York Times* in 1932 that the notion was bunk. He counted the good and bad years and found that presidential-election years were as apt to be good as bad, and vice-versa.

Since 1932, as most of us can remember, elections haven't seemed to have much to do with good or bad business.

In a way, it's too bad that this report has punctured the bubble we always assumed was our "native wisdom." In any presidential-election year, it was a sure-fire way to sound learned and get listened to with respect—because nearly everybody we talk with also had a father and grandfather coming along late last century, and most of 'em have that same kind of business-is-bound-to-be-bad-in-an-election-year "native wisdom."

The Older Workers

"We are rapidly becoming a land of older persons," Isador Lubin, industrial commissioner of the N. Y. State Dept. of Labor, says. From 1940 to 1950, the number of working persons over 45 in New York State increased 28%.

We have no textile-industry figures at hand to show the change in worker ages, but everyone is aware that people are living longer and remaining able to work longer now than ever before. Everyone is aware, too, that the economic growth of the United States is creating more and more jobs. As Mr. Lubin says, "Management, labor, and the public must be alert to the need for making more-efficient use of the so-called older worker."

The N. Y. Labor Dept. is launching a "major on-the-job study of older workers" to: (1) find out how and to what extent job abilities are affected by age after 45, (2) learn how the maturity and experience of over-45 workers contribute to job performance, and (3) help to establish aptitude tests for use with older workers instead of present tests devised for younger workers.

In an editorial entitled "The Evil Men" on this page last July, we called attention to the vicious practice of discharging older workers merely because younger workers were available. We hope that all textile states will become concerned about this growing problem of older workers and do whatever is necessary to help solve it.

O. M. Thomas

The full-fashioned hosiery industry produced approximately the same number of stockings in 1954 as in 1953 . . . with 10% fewer machines. Textile Machine Works 1954 Statistical Survey

In the hosiery industry, the one unyielding force is obsolescence. Compare the production of your least efficient machinery with a "Reading 100" Full-Fashioned Knitting Machine—in courses per minute, dozens per hour, salability of fabric. With every Reading Machine you get the benefit of Textile Machine Works' engineering help, service and technical experience. Write us.

TEXTILE MACHINE WORKS, READING, PENNA.

The "READING 100"
Full-Fashioned Knitting Machine

30 Sections 51, 60, 66, 75 Gauge

After the Great Ford Foundation Gift . . .

What Still Remains To Be Done To Provide Decent Faculty Pay

The Ford Foundation's gift of a half billion dollars to our privately supported colleges, medical schools and hospitals, now being distributed, is magnificent. But it will be much more magnificent if it inspires completion of the job to which it gives a lift. So far as the colleges and universities are concerned, this job is primarily to rescue their faculty members from being second-class citizens economically.

Even in a period when we have become accustomed to astronomical financial figures, a half billion dollars remains an eye-popping gift. In fact, it is so imposing that a good many people who don't read the fine print are apt to conclude that it must just about solve the financial problem to which it is addressed.

Goes Only a Small Way

However, we have allowed college professors to fall so far behind the parade financially that the share of the Ford half billion dollar gift going directly to the improvement of faculty salaries ($210 million) will go only a small way financially toward doing what is necessary to provide adequate salaries.

Completion of this job for our privately supported colleges and universities calls for:

1. An increase in faculty salaries at least five times as great as that made possible by the Ford gift merely to restore salaries to their 1939 purchasing power level and an increase fifteen times as great to provide adequate salaries today.

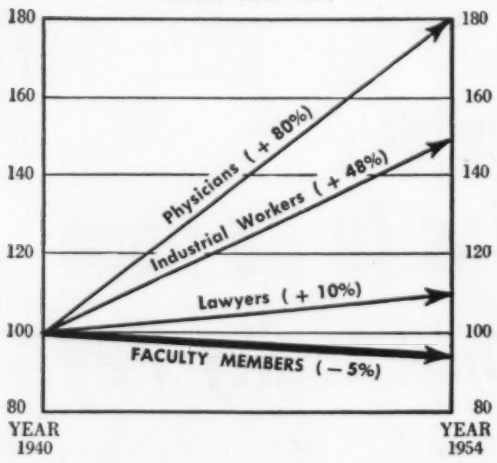
2. Some difficult and courageous decisions by the heads of the colleges and universities in apportioning the grants received by them.

Terms of Gifts to Colleges

The $210 million of the Ford Foundation gift going specifically to improve faculty salaries is being distributed on the following basis: Each of 615 privately supported, regionally accredited liberal arts and science colleges and universities receives a gift about equivalent to its last year's teaching payroll. For ten years only the income from these gifts is to be devoted to raising faculty salaries. After that all the money can be spent in any way the institutions receiving it see fit. There is no requirement that universities having other than liberal arts and science schools limit use of the gifts to improving salaries in these schools alone. They can spread it right through all their faculties if they wish.

In addition to the gift of $210 million specifically directed to increasing faculty salaries, another gift of $50 million goes to a group of 126 institutions selected for specially noteworthy leadership in improving

What's Happened to College Faculty Salaries*



* Real Income before Taxes.

Source: Council for Financial Aid to Education; U. S. Dep't of Commerce: U. S. Dep't of Labor.

the status and pay of teachers. For these schools the individual gifts add about 50% more to the amounts coming from the $210 million fund. They can be used to improve faculty salaries if the institutions choose to do so, but this is not required by the terms of these gifts.

The $210 million plus the $50 million should yield an income of $10-$13 million a year. Even if all this is used to raise salaries, it will be only a small step, however worthy, toward the $200 million per year the colleges need to meet their salary requirements adequately.

Helps Some Who Need It Most

In focussing its gift to improve faculty salaries in privately supported liberal arts and science colleges, the Ford Foundation aims at least part of the help at the spot where it is most desperately needed. Numerous surveys have indicated that the most poorly paid of all college and university faculty members are those in small, privately endowed liberal arts colleges.

But the overshadowing fact is that the teachers in our colleges and universities as a whole are badly underpaid. Just how badly is indicated by the chart above which first appeared in an earlier editorial. (Figures later than those for 1954 are not available.)

The Ford gift will turn the indicator of faculty salaries, which now lies far below the general salary trend, upward a few points. And it will do this in some places where salaries are below the wretched average shown by the chart.

But the Crucial Test Remains

College and university administrators will have the opportunity to extend further the process of getting the help provided by the Ford Foundation gifts where it is most needed. In general, this will mean giving it to senior faculty members, in order to hold experienced teachers and make college teaching attractive as a career. But to make such a division in many schools will take extraordinary fortitude.

The crucial test of the success of the enterprise of the Ford Foundation in raising faculty salaries will lie in whether it prompts the rest of us — college alumni, individuals, business firms and legislators alike — to see that it is a great beginning, not a signal for a recess.

Even with the Ford gifts providing $10-13 million a year, our privately supported colleges and universities must have an increase of about $190 million a year to provide decent faculty salaries.

This is a job far beyond the capacity of the Ford Foundation, imposing though that is. It is a job far beyond the capacities of a few hundred large corporations and a few thousand wealthy individuals. If it is to be done, it is a job at which all of us must work with a will.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C. McGraw

PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.

Two Motives That Make People Work Better

Two of the basic motivations to work are pride in work and control over one's job

- **Management can help the growth of pride in work to encourage top performance**
- **Management cannot control all the features of a worker's job but can make worker participation pay**

WHAT DO YOU WANT employees to be or to do? If you want them to be alert, eager to improve themselves and their jobs, and full of ideas on how to change their jobs for the better, that is one problem. If you want employees to be docile and obedient, to do as they are told without giving any trouble, that is another problem.

There is a real conflict between the motivation to work creatively and the motivation to obey. If you go to extremes in one, you pay for it in the other.

Pride in Work

One of the two basic motivations to work is pride in work.

People want to be proud of their jobs and proud of the quality of work they turn out. There are great variations in jobs concerned with turning out any product, and the range is from highly skilled craftsmen to the unskilled laborer. Most jobs provide some opportunity to work creatively and give the worker a feeling of pride in his job.

Opposed to pride in the job are reasonable fears on the worker's part. One fear the worker has is that if he does his best, the company may make too much money and exploit him. A second fear is that his own excellence may show up fellow workers who cannot do as well and his own work may be used as a standard of comparison that puts fellow workers at a disadvantage.

Management can help the growth of pride in work. It can try to understand and respect the status hierarchy set up by the work group. Workers know best who among them is the best, fastest, and most accomplished.

Management, through the foreman, can encourage top performance from top men by recognizing that they are outstanding and by indicating that progress or superior work by one man will be recognized, respected, and expected of him without changing what's expected

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From a paper presented by Dr. Frank B. Miller, Cornell University, at the 36th Silver Bay Conference on Human Relations in Industry and published by Association Press

of his fellows. Men hate to be used as a whip over their fellow workers.

This is a delicate business, and each foreman has to handle his own situation. There are always two ways of handling any situation, a good way and a bad way.

For example, in the company there might be an old worker jealous of a new man. One foreman might encourage the older worker to view the young man as recipient of the older worker's help. The result is progress for the young man, satisfaction for the older man, good relations, and more production.

Another foreman might encourage competition, and the young man might be viewed as showing up the older man. The result is that the old worker sabotages the young man, the young man is frustrated, management prestige suffers, and production is lowered.

Management must be careful not to get in the way of motivation to work or to have a negative attitude toward it. When a superintendent, in response to a wage demand, says "I can pick a man off the streets and teach him the job in two weeks," or "All you men do is turn a few dials," he is humiliating the worker's pride in his job and lowering his motivation to work.

Control Over Job

The second basic motivation to work is the feeling of control over your own work.

The employee needs to feel that he has some control over the planning of the job and the details of carrying it out. Coupled with this need is the drive to understand his environment and the importance of his job in the total company picture.

To the worker, participation is an important word; and he values consult leadership over tell leadership. Studies indicate that highest morale groups have supervisors who consult workers on suggestions and give them a feeling of participation in decisions that affect their working lives.

At one company, groups of girls discussed with a leader how much they could do. They set their own production goals and did much more than a control group that had no opportunity to discuss goals. Both groups were under the same piece-rate incentive system.

In one test, six girls were separated out of a large department and put in a separate room assembling telephone relays. This group, isolated from normal supervision and consulted with and listened to by researchers, without any outside suggestions, decided to increase production constantly. They made gradual increases for 12 of the 13 six-month's periods.

Groups of workers in one company were so determined to set a record for their group that three of the groups were producing well over what the company engineers predicted was the limit of machine capacity. The workers' material rewards were soft drinks, cigars, a wooden plaque, and congratulations from the production manager. The invisible rewards were more important, for the company had taken away barriers to motivation and allowed the workers to set their own goals.

Control Depends on Setup

There are many companies where the employer-employee setup does not lend itself to this process of some control by the workers. Companies cannot immediately destroy the barriers of suspicion, resentment, and fear to the natural motivation people have to do their jobs the best they know how. A manager can learn from these examples that people want to understand and control as much of their work environment as possible. This feeling of control is important to every worker.

There are things about his job that a worker cannot control. There are other things that he can control better than anyone else, but often he is not allowed to exercise this control. If management agrees that it is important to see how worker participation in making some decisions pays, there is still the problem of how much and where his participation is useful.

No manager should fool himself by thinking he can control all features of any worker's job. The worker will exert control, whether management likes it or not. Since his need for asserting control is not satisfied through any legitimate channel, he will satisfy it by beating the production system, by dragging his feet, by restricting production, or by doing things the wrong way when he can get away with it. He will not allow himself to become a purely mechanical cog; he wants to know and to show that he matters.

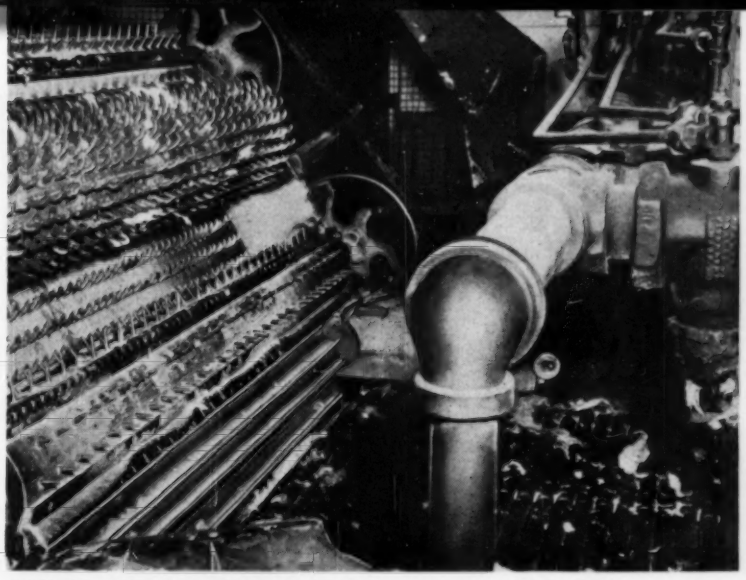
Work vs. Authority

In the consideration of motivation to work and motivation to obey, management sees the two forces are almost indistinguishable. Workers tend to be more work-oriented and less authority-oriented. This tendency is part of their concept of their own dignity as free men. They prefer to emphasize the demands of the job more than the demands of superiors merely because they are superiors. The trend toward democratic participation emphasizes task-orientation motive rather than authority-obedience motive.

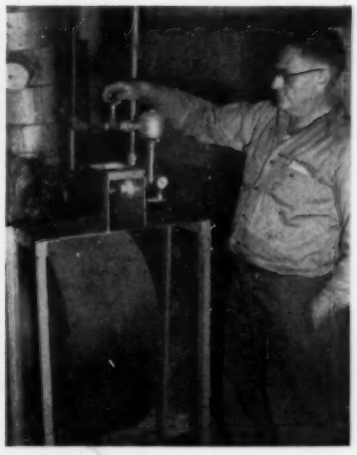
We cannot assume that men in authority are always adaptable to change or more willing to act democratically if it will increase effectiveness of the total organization. There is no reason to assume that men of sterling character are any more numerous in the ranks of management than in labor.

Management, like the work force, is composed of people with prerogatives, status needs, and ego needs. Any solution to company problems that might seem to lower status, diminish prerogatives, and decentralize control is likely to meet management's resistance, even though this solution could lead to efficiency. Democracy must percolate down through the company.

Management's problem, then, is twofold: (1) how to use expertly the worker's pride in his job and his desire to exercise some control over job planning and (2) how to substitute democratic leadership for authoritarian control all down the line, from top management to the lowest worker.



NEW FEED ROLLS don't get choked with fiber and jam. The solid-steel eight-bar rolls also deliver stock more uniformly and eliminate the need for relagging.



OIL is sprayed on the stock after picking. The new oiling unit contains an oil reservoir, two tanks, and a motor and fuel pump.

WOOL PICKERS Improved With New Feed Rolls and Spray Oiling

By feeding stock dry to the pickers and jet-spraying it with emulsion in the blower duct, this mill is getting more-uniform penetration and less clogging of picker lags. New steel feed rolls that don't jam were also added to the pickers to cut maintenance downtime.

By PAUL M. PLATZMAN

TWO RECENT ENGINEERING DEVELOPMENTS have increased the efficiency of the picking operation at the Johnson City, N. Y., plant of The Felters Co.

The mill now sprays emulsion on the scoured wool or cotton stock in the blower line following the picker instead of lubricating the stock on the apron. The new system provides more-uniform penetration of the fibers.

Previously, the stock was sprayed on the picker feed apron. This process had two distinct disadvantages: (1) emulsified fibers matted easily and clogged the lags of the picker and the cockspur feed roll, and (2) much of the emulsion was thrown out of the stock as it passed through the blower following the picker.

Now, since the stock enters the picker dry and is jet-sprayed in the blower duct that carries the stock from the picker to the carding-room bin, these problems have been eliminated.

The idea was that of Superintendent Upham, and the plant machinists made the simple change-over. They installed an oil reservoir, a mixing tank, a holding tank, and a $\frac{1}{6}$-hp. motor and fuel pump (the same type of unit used to fire domestic oil burners) near the blower ducts.

The emulsion is pumped from the holding tank through a filter to spray jets on both sides of the duct. The stock is lubricated by oil mist as it passes beyond the blower. A return line that leads to the holding tank completes the circuit. The amount of spray oil, indicated by a pressure gauge just after the filter, is regulated by stopcocks in the spray lines or a valve after the holding tank in the main feed line.

New steel feed rolls have also boosted the efficiency of the mill's picking operation. The old cockspur feed rolls that delivered the raw stock to the picker cylinder jammed frequently when fibers accumulated between the teeth and choked the rolls. The packed fibers, reports Superintendent Upham, had to be chiseled away, which caused a considerable loss in production time.

To eliminate this problem, The Felters Co. and Rodney Hunt Machine Co. developed a solid-steel eight-bar feed roll. Two of these rolls intermesh and always have a $\frac{1}{8}$-in. clearance between and around the bars.

These rolls have solved the jamming problem and reduced maintenance downtime. They also deliver stock to the picker in a more-uniform condition. In addition, the new feed rolls have a much longer life and make relagging a thing of the past.

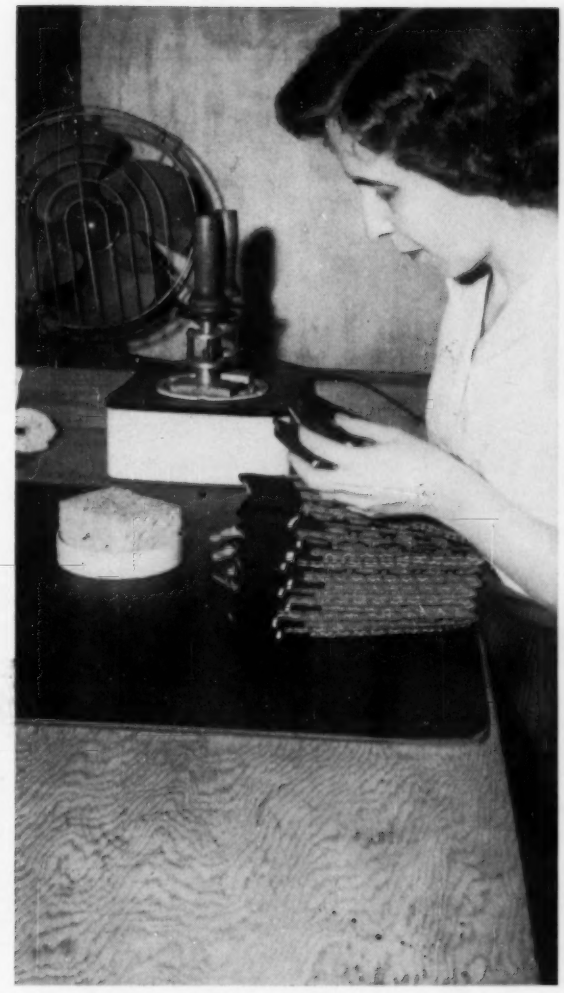
MIRROR behind the packaging machine assists in better inspection.

TRANSFERS are applied while the socks are stretched on forms.

PACKAGE HOSIERY
For Better Sales Appeal

• Stretch socks are being packaged in attractive styles. New methods and machines guarantee little lost production time. Inspection is better because it is done while the goods are stretched.

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD



TWO SOCKS on one cardboard form are bent over in the middle.

FINAL OPERATION is to apply a band to complete a neat package.

WHEN STRETCH SOCKS first made their appearance, customers were reluctant to try these products because they did not look attractive on the counter. This unattractiveness has largely been overcome with new packaging ideas and stretching the socks on cardboard shapes.

Some manufacturers complain of the additional cost of labor and wrappings; but Southerland Dyeing & Finishing Mills, Inc., Mebane, N. C., does a thorough job of packaging with a minimum of labor. The system eliminates a boarding operation; but the result is a neat, attractive package of hosiery.

The socks are delivered dry from the dyehouse to the finishing room in loose form. The socks are not finalboarded but are placed behind the packaging-machine operator.

Two Socks on Each Shape

A Berrypack-er machine, made by Process Machinery Co., is used to rapidly place the socks on the cardboard forms. The machine is actually two forms in one, and two socks are placed on each cardboard shape.

The cardboard shape is placed in between the two forms, and the first sock is pulled over the form. The heel section of the form is moved to the right as the operator draws on the sock. The operator moves this section with pressure on a foot pedal.

When the sock is withdrawn with the cardboard shape, pressure is relieved on the foot pedal to allow the sock to slip easily from the form. The sock on the cardboard shape is then replaced on the form and another sock pulled over the first one.

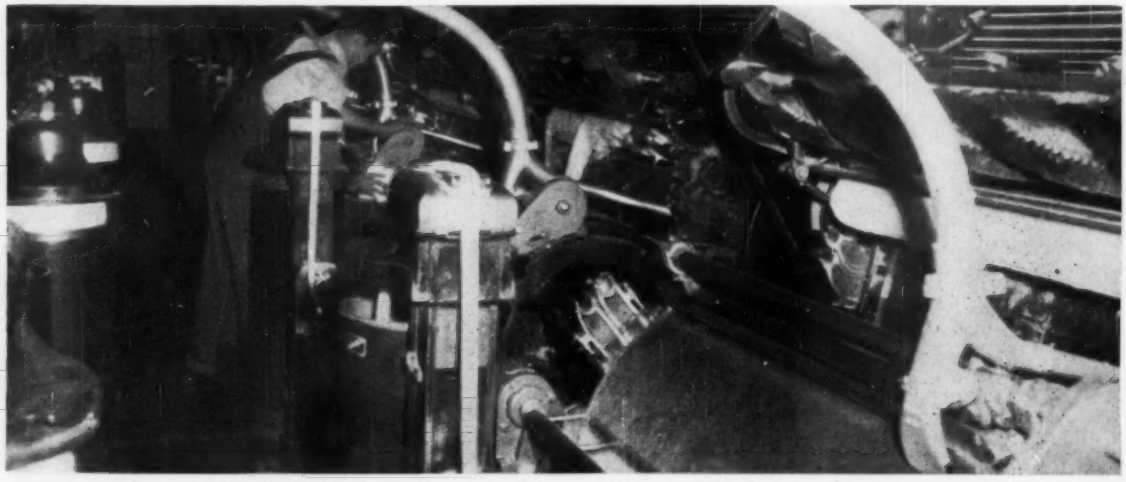
All socks are inspected on both sides as they are drawn on the form. A mirror fixed to the bench behind the Berrypack-er machine helps the operator do a better inspection job.

Daily Production Is 125 Doz.

One girl inspects and places about 125 doz. socks on the shapes each day. The goods are stacked on the table at the operator's right side and go straight to the transfer operator when the lot is complete.

This operator finds the goods easy to transfer while they are on the shape, and the same operator folds the socks and shapes in the middle and sticks a ticket over the toe and welt to hold them together.

A final band is placed over each package, and the goods are ready to be placed in boxes.



CARDS produce 51,604 lbs. of 49.5-grain sliver in 120 hrs. operating at 97% efficiency. Grinding cycle is 240 hrs.

Highland Park's New ROVING and SPINNING

Phase One of Highland Park Mfg. Co.'s wide modernization program has been completed in Mill No. 1. Improvements include—

- **Revamped cards**
- **New spinning**
- **Large-package roving**
- **Refrigerated air**

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

YARN QUALITY has been improved and work assignments increased by the installation of new roving and spinning at Mill No. 1, Highland Park Mfg. Co., Charlotte, N. C.

Mill No. 1 produces weekly around 52,000 lbs. of 25s and 35s carded warp yarn. Although the mill has a few looms of its own, the majority of the yarn is put on section beams or made into cheeses for weaving in the nearby No. 3 plant. End products include shirtings, dress goods, ginghams, and specialty fabrics.

Picker laps are made for Mill No. 1 by Mill No. 3 in a recently modernized and consolidated opening and picking section. The 12½-oz. laps, made from 1 1/16-in. Strict Middling cotton, are transported by truck directly to Mill No. 1's card room and placed on 52 Whitin and H&B cards that produce a 49.5-grain sliver at 7.6 lbs. per hr.

Cards have been overhauled completely and equipped with Abington strippers and Southern States comb boxes. At present, 12-in. coilers and cans are used; but the mill plans to convert to larger coilers.

A special effort is made to keep card clothing in good condition. Each year, two leading card-clothing manufacturers are invited to survey the machines. Findings of the two companies are weighed against a survey made by the mill at the same time.

In the drawing section, there are 60 deliveries of 1948 H&B four-roll drawing. The frames recently were overhauled by Norlander-Young Machine Co. The 30 deliveries of breaker drawing, six-ends-up, produce a 49.5-grain sliver with a draft of six. The finisher drawing, six-ends-up, produces a 51-grain sliver with a draft of 5.82.

Old three-process roving was replaced with six new Whitin Inter-Draft 144-spindle 9x4½ frames. The frames have four lines of rolls and two drafting stages. The stock is folded and guided by a plastic condenser between the second and third line of rolls as the cotton passes from the back to the front-drafting zone. The frames are equipped with Pneumastop.

The normal draft range is 10 to 18. For the 2.00-hk. roving spun into 25s yarn, the back-zone draft is 3.03, front-zone draft 3.97, and total draft 12.03. Twist multiplier is 1.31; front-roll speed 168 rpm.; spindle speed 1,100 rpm.; doffing time 2.5 hrs.

For the 2.40-hk. roving used to make 35s yarn, total draft is 24.45, back draft 3.33, and front draft 4.34. Twist multiplier is 1.34; front-roll speed 151 rpm., spindle speed 1,100 rpm., doffing time 3.16 hrs.

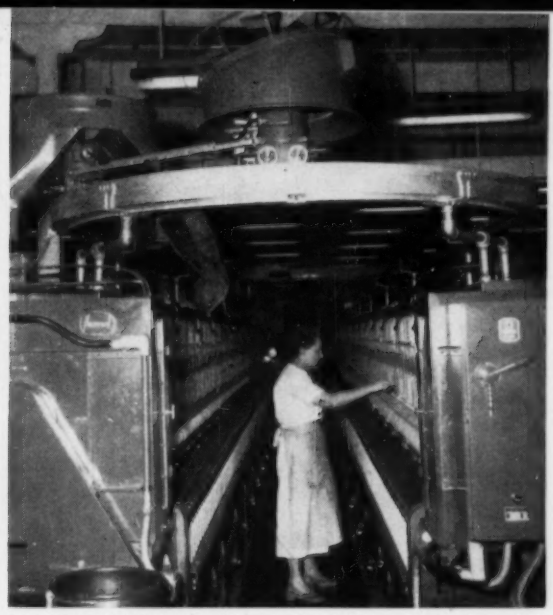
Evenness is 7.2%

Mill tests made over a six-month period showed roving evenness to have an average deviation of only 7.2% for the 2.40-hk. roving. Evenness of the 2.00-hk. roving is comparable.

Old spinning was replaced with 50 Whitin F2 312-spindle spinning frames that have 3½-in. gauge, 1⅞-in. double adjustable rings, antifriction spindles, and 8-in. traverse. The frames are equipped with Parks-Cramer overhead cleaners and Pneumafil.

Front-roll speed for 35s yarn is 124 rpm., twist multiplier 4.35, and break factor 22.50. For 25s yarn, front-roll speed is 144 rpm. and twist multiplier 4.45. Spindle speed for both numbers is 10,100 rpm. Ends down average 20

SINGLE-PROCESS ROVING, equipped with Pneumastop, may later be converted from 9x4½ to 10x4⅜.



OVERHEAD CLEANERS and Pneumafil reduced cleaning time 50% in the spinning room.

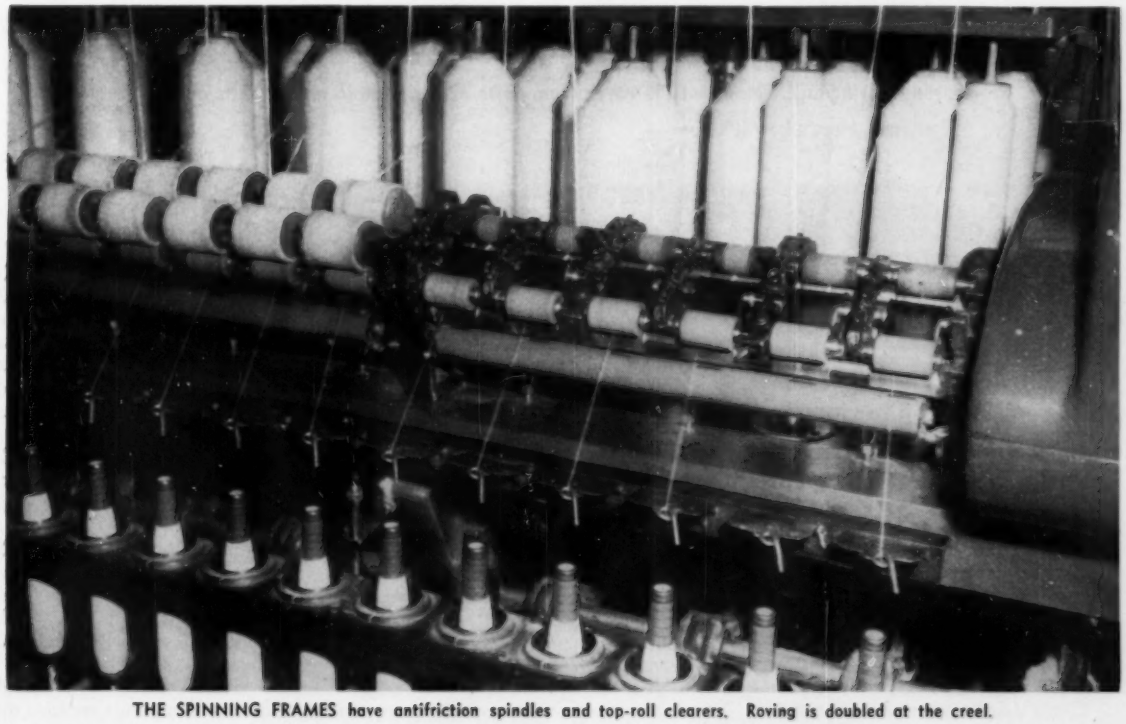
per 1,000 sp. hrs.; breaking strength improved.

Spinners are now assigned 16 sides or 2,496 spindles, an increase of 65% over former assignments. Creeling time has been reduced 50%. Operators now tend the larger number of spindles with less personal effort.

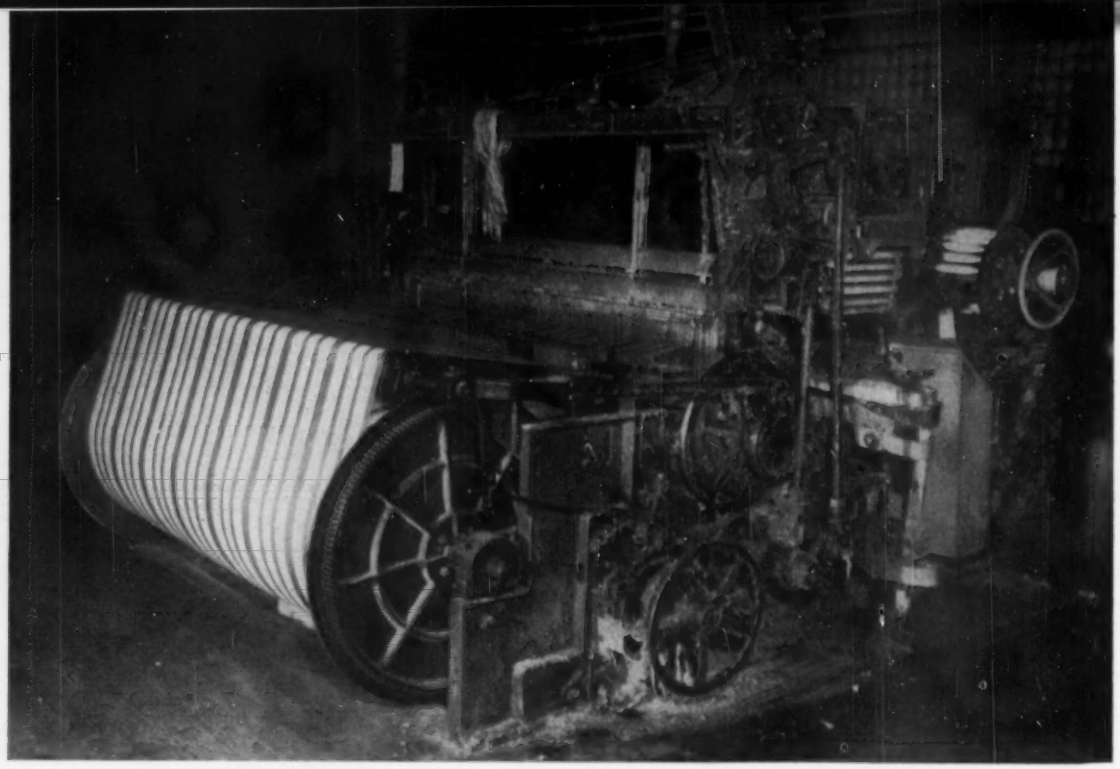
Other spinning benefits include lower costs for maintenance and repair, less cleaning, and greater flexibility of operation.

Cheeses are made on two new Barber-Colman spoolers. Drum speed is 1,378 rpm., tie-ups are 72 per min., and throw-outs average 16 per round. Snick-plate setting is 24 for 35s and 26 for 25s.

During the warm months, the carding and spinning departments are air conditioned with refrigerated air supplied by American Moistening Co. equipment. Temperature the year around is 72°F., and humidity is 52%. The air-conditioning equipment includes a 320-ton Trane Centravac water-cooling unit.



THE SPINNING FRAMES have antifriction spindles and top-roll clearers. Roving is doubled at the creel.



YARN BEAMS 32 ins. in diameter are used on XP looms. The looms have 20 harness dobbies.

Avondale Mills Modernizes To Weave FANCY FABRICS

• To weave a wider range of fabrics, new looms were added at this cotton and staple-rayon weaving mill. Now cloth is woven from 40 to 72 ins. wide in many colors and in 50 styles. Here's how it's done—

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

FOR MANY YEARS, Avondale Mills' Bevelle Plant at Alexander City, Ala., concentrated the bulk of its production on striped ticking fabrics and denims. The fabrics woven still include black-and-white striped ticking and denims, but new fabrics have been added. Now, there are tickings in many colors; drapery materials are woven; and there are drills, twills, and gabardines for the apparel trade.

The fabrics vary from 32 to 72 ppi. Cotton warp yarns range from 20s to 13.5s. Staple-rayon warp yarns are in the 22.4s area. Cotton filling varies from 24s to 9s. Staple-rayon filling runs from 22.4s to 9.5s. At present, 75% of the filling woven is staple rayon.

Cloth styles come and go fast at the mill. During the past year, there was a 400% turnover in styles. Usually there are about 50 styles in 100 patterns being woven. Approximately 600,000 yds. of cloth are woven each week.

Modern Looms Are Added

To weave the new fabrics efficiently, modern looms for multiharness weaving were added. The newest looms for weaving drapery fabrics are 64-in. Draper XP models with 20-harness dobbies. This group of looms is equipped with Roper let-offs and 32-in.-dia. beam heads.

On the average yarn woven on the XP looms, the yarn beam runs six weeks. On 22.5s yarn, a 12,000-end set at the slasher makes only three loom warp. Most warps are retied.

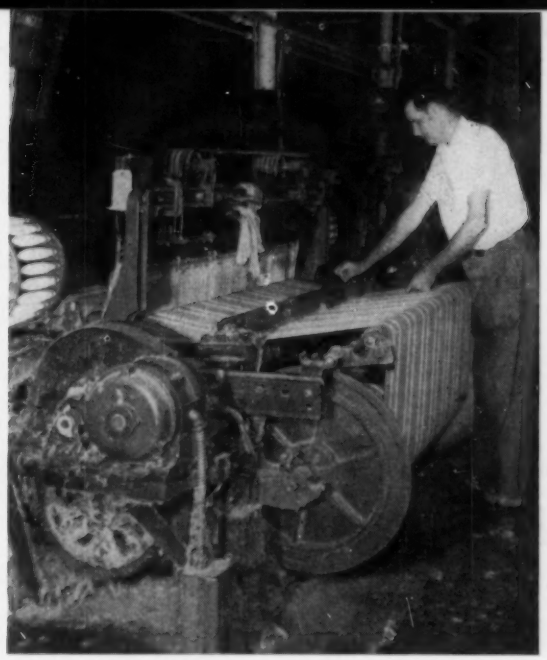
Another new loom model is X-2 looms 54 ins. wide. These looms have six-harness clock-spring-top harness motions. The looms, like all looms at the Alexander City mill, are equipped with auxiliary tape-selvage harness motions.

The X-2 looms have one side-fork filling stop motion. At present, center-fork stop motions are being put on 25 looms for a test.

Older looms at the mill are X models and modified D. Clock-spring tops are being added to these looms. On looms up to 60 ins. wide, one clock head is used; on looms wider than 60 ins., two heads are used.

Regular vibrating whiprolls are used on light fabrics. Drag rolls are used on

TYING IN is done with a 56-in. Barber-Colman portable machine. Many warps are tied in a single hand.



STRIPED FABRICS up to 54 ins. wide are woven on X-2 looms with clock-spring-top harness motions.

heavy fabrics. Slotted checkstraps are run on all looms. All shuttles are lined with fur and equipped with bristles.

Weaving Efficiency Is High

Weaving efficiency averages above 90%. Second-quality cloth runs 6½ to 7%. The weekly report at the time of this writing showed 92.05% efficiency and 4.05% seconds. There is a total of 854 looms.

There's a foreman of weaving who has four assistant foremen on each shift. There is also a loom instructor who is in charge of weaver and loomfixer training. In addition, he works out better loom settings for all styles of cloth. He works on the first shift.

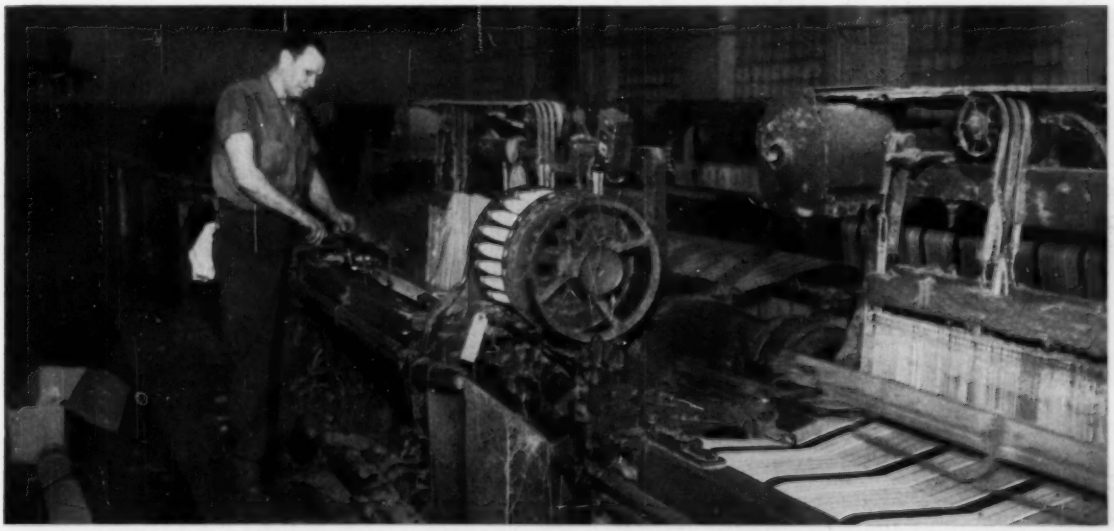
All changes in loom settings are made by the foreman's orders. On standard settings, loomfixers check all new warps by a checklist. Then the assistant foremen check after the loomfixers. The foreman spot-checks 8 to 10 looms each week on each assistant foreman's job.

Easy Way To Clean Overhead

Battervhands handle their filling in carts. Warps are handled by a monorail system. Where it is possible, warps are replaced in the weave room with a 56-in. Barber-Colman portable tying-in machine.

The weave-room windows are enclosed with glass bricks. For atmospheric control, there is an air-changing system with auxiliary atomizers. Temperature is held at 70 to 80; relative humidity is 88 to 90%.

Overhead cleaning is done from the I-beam of the monorail. Burlap is attached to a frame and fastened to the monorail. A cleaning employee stands on a catwalk on the I-beam and blows down overhead with an air hose. He makes a clean sweep of one length-way section of the weave room without coming down from the monorail. All lint falls on the burlap and is kept off the looms.



CENTER-FORK filling stop motions are being put on 25 X-2 looms by the loom instructor.

New Method Measures Hardness of YARN TWIST

Here is a method for fully characterizing a yarn for its degree of twist. With this method, yarns with the same degree of twist will have the same value regardless of weight. The formula is: Twist constant = (turns per inch)^2 x (grains per 100 yds.) ÷ 100.

By CARL GORDON, Albany Felt Co.

A UNIVERSAL LANGUAGE that designates how twist affects a yarn, regardless of the fiber involved, would be a step forward for the textile industry.

Many textile men still talk about turns per inch when they describe the twist of a yarn. But turns per inch is only half the story because the yarn number is equally important in determining if the yarn is hard or soft.

For example, a 50s worsted yarn with 19 tpi. might be considered normal; but a woolen man making yarn 10 times heavier would consider the same number of turns impractical because the yarn would be too hard.

A method for fully characterizing the yarn for its degree of twist by use of twist constants is available for use. With this method, yarns with the same degree of hardness or softness of twist will have the same value, regardless of weight.

In the cotton branch of the textile industry, twist is linked to yarn size by the cotton multiplier; in the worsted branch, by the worsted-system factor; and in the woolen branch, by the run system factor.

Degree of twist	Worsted-system factor	Run-system factor	Cotton multiplier	Twist factor
Soft	1.67			35
Normal, warp	3.07			118
Medium hard	4.22			223
Hard or crepe	5.32			354
Soft		3.57		56
Normal, filling		4.58		92
Normal, warp		5.60		138
Medium hard		6.62		192
Hard		7.63		254
Knitting			3.00	75
Filling			3.50	102
Warp			4.75	188

Formulas for these factors are:

Cotton multiplier = turns per inch ÷ cotton yarn number

Worsted-system factor = turns per inch ÷ worsted yarn number

Run-system factor = turns per inch ÷ run of yarn

Twist Constant Defined

Here's how to calculate twist constants:

Twist constant = (turns per inch)^2 × (grains per 100 yds.) ÷ 100.

The twist constant is related to turns per inch and weight. The calculations are easy to make on a slide rule. Set the index of the *C* scale opposite the turns per inch on the *D* scale. Then set the hair line of the runner at the yarn size in grains per 100 yds. on the *B* scale. The twist constant is found above on the *A* scale.

The American Wool Handbook and the American Cotton Handbook give data on soft- and hard-twisted yarns on the cotton, woolen, and worsted systems. According to the accompanying table, taken from those handbooks, the factors used with yarns of the same hardness in the woolen and worsted systems are not the same.

Although the differences might be justified on the basis of fiber length and fineness, there is a lack of consistency. The woolen-yarn twist constants are higher for the soft, normal filling, and normal warp yarns; but in the medium-hard and hard yarns, the worsted-yarn figures are higher.

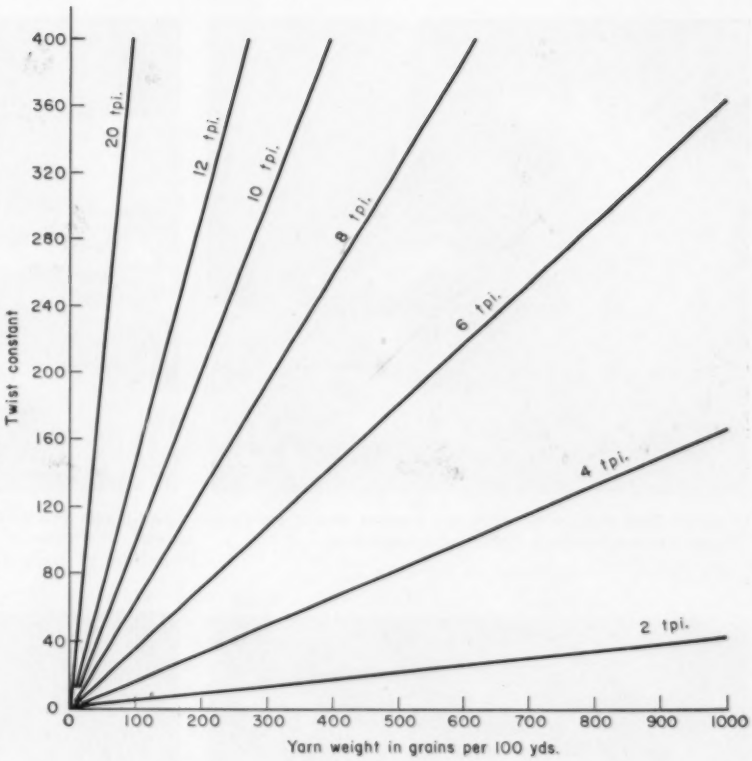
Easy To Remember Constants

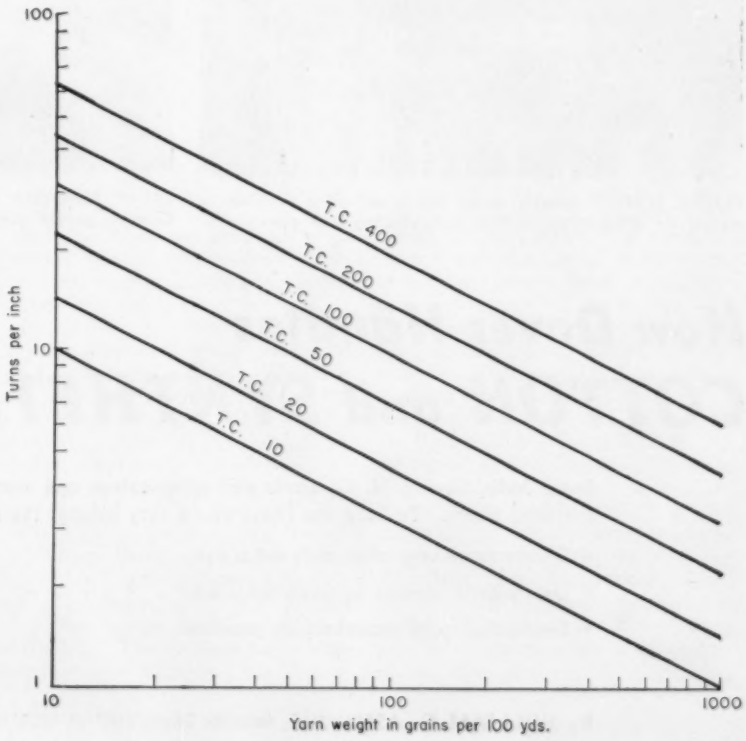
The conventional factors or multipliers range from about 2 to 10 and cover the area between very soft and extremely hard. The small band makes it necessary to use two decimal places for reasonable accuracy. Twist constants, on the other hand, range from about 10 to 400, with the most frequently used yarns ranging from 40 to 200. Elimination of the decimals provides numbers that are easier to use and remember.

Although the degree of twist for different yarn catagories cannot follow a hard and fast rule, tentative standards can be very useful. The following standards can be remembered easily and used by all branches of the textile industry:

Yarn	Twist constant
Soft	50
Normal, filling	75
Normal, warp	150
Medium hard	200
Hard	300

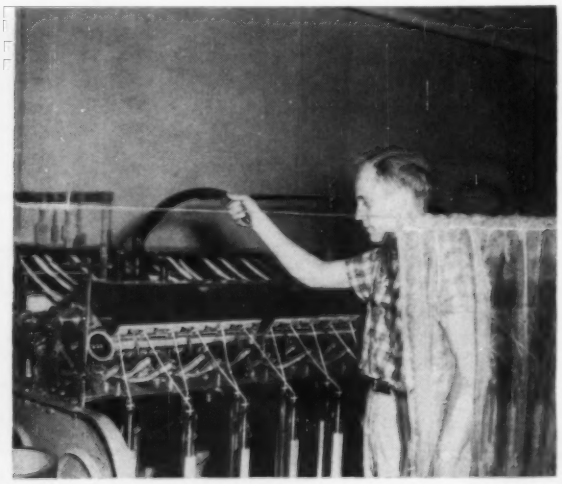
Here are some convenient conversion factors: Twist constant = (cotton multiplier)^2 × 8.33 = (worsted-system factor)^2 × 12.5 = (run-system factor)^2 × 4.375.



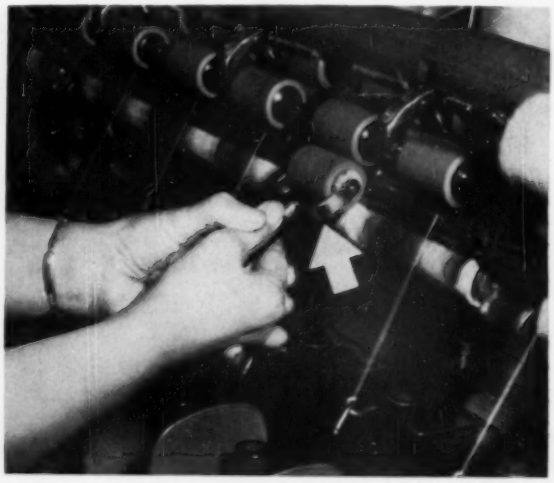


LICKERIN BOX (left) with sealed ball bearings permits speeds to 700 rpm.; feed-roll journals (right) are casehardened.

HIGH-SPEED DRAWING has fibre gears and ball-bearing coiler heads. The frames at present are running 192 ft. per min.



PLASTIC SCREENS separate roving frames and other machines to prevent the different blends from contaminating each other.



LAP-UP REMOVERS (arrow) are used by all spinners instead of knives to protect synthetic cots from damage.

How Dover Handles *COTTON and SYNTHETICS*

Dover Mills, Shelby, N. C., cards and spins cotton and many different blends of synthetic fibers. To keep the fibers where they belong, the mill—

- **Cleans machinery after each lot is run**
- **Uses plastic screens between machines**
- **Emphasizes good housekeeping practices**

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

Dover Mills Co., Shelby, N. C., is proud of its versatility. Producing dress goods, drapery materials, corset cloths, and specialties, the mill spins carded and combed cotton yarns and many blends of synthetic fibers. Yarn numbers range from 16s to 32s.

Frequently, more than 15 blends are in process at one time. Hundreds of different blends are handled during the year.

Dover's ability to shift its machinery on a moment's notice from one blend, staple length, or fiber to another enables it to take advantage of rapidly changing markets and styles. Special hurry-up orders are handled with a minimum of waste by operators who pride themselves on being "quick-change artists."

Any mill running a wide variety of fiber combinations on the same machinery has to be clean, or the stock will become contaminated with stray fibers from a different blend. Good housekeeping is standard operating procedure at Dover.

Screens Are Used

Each machine is cleaned thoroughly as soon as each batch of cotton or synthetic fiber passes through it. Another precaution against contamination is the use of portable plastic window-screen curtains between machine sections and individual machines. These screens intercept airborne fly.

Combed yarn is made from carefully selected 1⅛-in. Strict Middling Delta cotton. Spun-synthetics yarn is made from blends of rayon, Acrilan, Orlon, Dacron, and other manmade fibers.

In the opening room, 32 bales of cotton are laid down. Feeding is from eight bales to four F-7 feeders, followed by a vertical opener, a No. 12 lattice opener, a No. 11 condenser, and a gyrator.

In the picker room, two one-process Saco-Lowell pickers process both cotton and synthetic fibers. The pickers, equipped with blending reserve and pneumatic rack controls, have two Kirschner beaters running 960 rpm. Both cotton and synthetic stock receive 70 beats per inch.

Normally, a 56-yd. 14-oz. lap is made in a little more than 8 mins. per picker, regardless of blend or fiber. However, when 100% Dacron is run, the lap length is shortened to compensate for bulkiness.

The picking process for cotton and synthetics is the same, except for the mechanics of feeding the picker hoppers. Cotton is fed from the opening room via a pneumatic pipe, condenser, and automatic feed control. Synthetic stock is removed from bins and fed to the pickers by hand.

The usual procedure is for cotton to be picked during the first shift, while the synthetics bins are being filled. The remainder of the day is devoted to processing synthetic blends. Opening-and-picking equipment is equipped with No. 6 filters that clean and recirculate room air.

In the carding section, there are 48 40-in. Saco-Lowell cards producing a 55-grain sliver at 7½ lbs. per hr. Settings and speeds are standard, based on a cylinder speed of 165 rpm. Grinding cycle is 14 days.

Oiling Is Reduced

The cards have been equipped with sealed ball-bearing lickerin boxes and casehardened feed rolls with needle bearings. The lickerin boxes have reduced oiling from once every 24 hrs. to no oiling at all. The feed rolls require no oiling, but occasionally the card tender puts a little vaseline on the journal. Cleaner sliver is made, for there is little chance of oil getting into the stock.

When 100% Dacron is carded, a fancy roll is placed on the cards to compress the bulky fibers. The roll runs 1,650 rpm.

Following the cards are standard four-roll Saco-Lowell breaker drawing frames running 120 ft. per min. on cotton to be combed. A 34-grain sliver with a draft of 12 is produced. If the stock is not to be combed, a 55-grain sliver with a draft of six is made on both breaker and finisher drawing.

Synthetic fibers are processed on a four-roll drawing system mounted on a five-roll chassis, which gives better control over the fibers.

In addition to the Saco-Lowell drawing, there are two Ideal frames (used as finishers) running 192 ft. per min. These frames have suspended ball-bearing tube gears that require no oiling. The choke knock-off is located beneath the calender rolls to increase the efficiency of the stop motion.

Combing is between the breaker and finisher drawing. A 10-in. Saco-Lowell lap winder produces 620-grain laps, 20-ends-up, which are combed on a Saco-Lowell machine, six ends to the side. The combers have three-over-four draw boxes and run 98 nips per minute. A 55-grain sliver is produced at 36 lbs. per hr.

Both cotton and synthetics roving is made on eight Saco-Lowell FS-2 10x5 frames that can be adjusted quickly to produce any size roving required by the mill. The usual range of hank roving is from 0.80 to 3.00. The frames are equipped with Pneumastop.

Spinning Room Is Split

The spinning room is split into two sections. Cotton and the shorter-staple-synthetics yarns are spun on 16 264-spindle Shaw frames that have 4-in. gauge and 2½- and 3-in. rings. For 28s combed-cotton yarn spun from 2.00-hk roving, front-roll (1-in. dia.) speed is 105 rpm., twist multiplier 4.75, back draft 1.56, total draft 28, and traveler speed 5,280 ft. per min.

The longer-staple-synthetics yarn is spun on 16 Saco-Lowell frames equipped with Z2 drafting. For 20s synthetics yarn spun from 2.00-hk. roving, front-roll (1⅜-in. dia.) speed is 110 rpm., twist multiplier 3.75, and draft 20. Traveler speed, gauge, and ring size are the same as for the frames running on cotton.

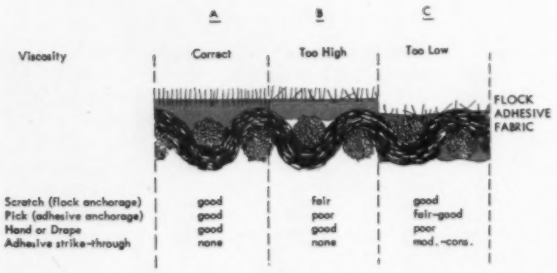
Spinners are not permitted to use knives to cut lap-ups off rolls; an Armstrong lap remover is supplied each spinner for this purpose. Use of the device has eliminated damage to synthetic cots.

The mill is conditioned with refrigerated air. Temperature is 80° F. and humidity 55% throughout the carding and spinning departments.

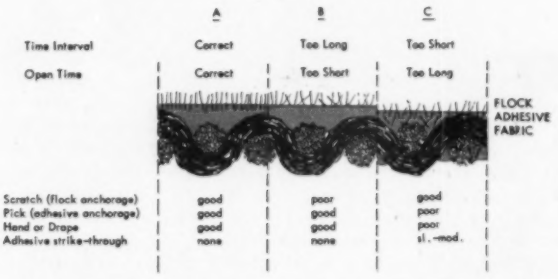
Good Safety Record

Dover is now well into its second million manhours of no lost time caused by accidents. The management credits this record to the work of a three-operator safety committee that is empowered to inspect any department at any time without notifying the supervisor. Before this system was set up, lost-time accidents averaged more than five per year. For every million manhours without a lost-time accident, the mill treats the employees to a barbecue and outing.

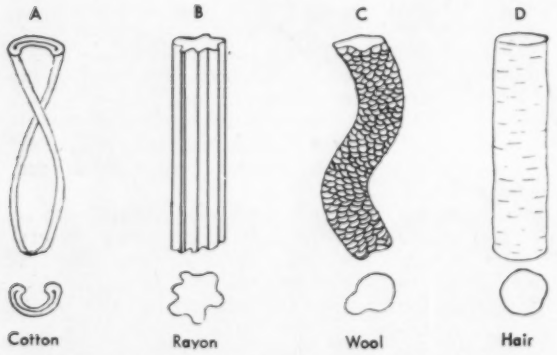
A useful management practice at Dover is the weekly meeting in the central laboratory of carding and spinning overseers from the six plants in the group. Yarn-production problems are discussed and yarn samples are tested. This exchange of ideas and experience contributes to the mill's successful operation.



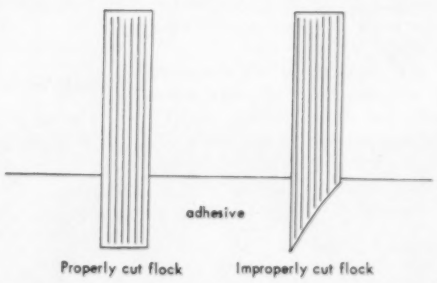
VISCOSITY of the adhesive is an important factor in producing a good flock on a fabric without affecting hand or drape.



TIME INTERVAL and open time must correspond closely, or the unsatisfactory conditions shown here at *B* and *C* will result.



FIBERS VARY in shape and cross section. These factors affect the production of a good flock. Rayon is good for the process because it is straight and fairly smooth.



SQUARE-CUT ENDS make a superior flock because they present more surface to the adhesive and become anchored more securely. Man-made fibers are easiest to control in cutting.

How To Produce *FLOCKED FABRICS*

Superimposing a pile on a plain-woven-fabric base can be successful if certain requirements are met. You have to look into the suitability of the base fabric for the job, the type of adhesive to use, and the kind of flock best adapted to the purpose. Here's how to get—

- **Proper adhesion**
- **Good coverage**
- **Durability**

By EDWIN L. DALE, Research Chemist, Pierce & Stevens, Inc.

IN THE PRODUCTION of flocked fabrics, the fabric, flock, adhesive, and application methods must be selected with an eye to coordination of these factors if the finished fabric is to be suitable for its end use. Requirements of drape, lightfastness, hand, durability, and resistance to cleaning methods have to be considered, as well as the prime factor of good cover.

All the commonly used fibers, singly or in blends, can be used to make fabrics that are suitable for flocking; but no one adhesive is ideal for fastening the flock to all fibers.

The majority of fabrics used for flocking are made of cotton or rayon. Cotton is probably the most generally suitable base fiber because of its inherent thermal and solvent stability. Rayon fabrics excel in feel and drape and are therefore almost exclusively used to make flocked dress goods.

The structure of the fabric is also important, as the weight and construction will to some extent determine the type of adhesive and its viscosity.

Possible Contributing Factors		Deficiency of Flocked Fabric					
		Poor Hand	Poor Pick	Poor Scratch	Strike–Through	Poor Dry–Cleanability	Poor Sunlight Resistance
Adhesive Open–Time too short				X			
Adhesive Open–Time too long		X	X		X		
Viscosity too low		X	X		X	X	
Viscosity too high			X	X			
Film Thickness too light			X	X		X	X
Film Thickness too heavy		X			X		
Time Interval between adhesive application and flock deposition	too short	X	X				
	too long			X			X
Flock Count	too low						X
Flock Color	light						X
	dark						
Time Interval bet. flock deposition and curing oven	too short	----	No apparent effect			--------	--------
	too long	X	X		X		
Oven Temperature	too low					X	
	too high	X					
Time in Oven	too short					X	
	too long	X					

FACTORS RESPONSIBLE FOR DEFICIENCIES of flocked fabrics are tabulated here. Poor pick refers to faulty adhesion of the adhesive to the fabric; poor scratch indicates poor adhesion of flock to the adhesive.

Flock adhesives vary greatly in composition, each possessing unique properties for some particular end use. Some of the solvent systems in general use are:

Neoprene. These adhesives are used for high-quality goods where maximum flexibility, dry-cleaning qualities, and abrasion resistance are required. Neoprenes work well on most types of fabrics and flocks but are not suitable for whites.

Polyisobutyl. Preferred where low cost is important and dry-cleaning and abrasion resistance are secondary, these adhesives are used in flocking paper and quarter-lining fabrics for the shoe industry.

Polyvinyl butyral. Where white flocks or pastel shades are required, these adhesives excel in their resistance to discoloration and natural light color.

Nitrile rubber. These adhesives are more costly but produce high-grade flocked fabrics of good hand and solvent resistance.

What Makes a Good Adhesive

A good flocking adhesive must have a certain mechanical quality that bears directly on attaching the flock to the fabric. This factor is called flock receptivity; and in any adhesive having the same film-forming ingredients, receptivity is dependent upon:

1. The rate of evaporation of active solvent from the film (open time)
2. The viscosity of the adhesive film
3. The adhesive wet-film thickness

Rate of solvent evaporation must be balanced so that the surface of the adhesive film will remain fluid long enough for the flock fibers to imbed themselves securely. This is the open time and has to be adjusted carefully. If it is too long, the fibers will become submerged in the film and the goods will be reinforced and stiffened. If the open time is too short, the flock will be poorly anchored and have poor abrasion resistance.

Adhesive viscosity is determined in part by the structure of the fabric and should be as high as possible and yet permit good anchorage of the flock. Adhesives of too low viscosity may soak into the base fabric during the open-time period with undesirable results. If the viscosity is too high, poor anchorage of the flock can be expected.

Wet-film thickness should be sufficient to anchor the flock securely. Excess amounts of adhesive will stiffen the fabric; inadequate amounts will decrease flock anchorage and lessen resistance to sunlight.

Flocks originate from any of the known fibers; but the predominant ones are cotton, rayon, wool, and animal hair. All are available in a wide selection of length, color, diameter, and uniformity.

Cotton flock varies in length and diameter and is necessarily random-cut. The flat, twisted fibers do not pack tightly, and for this reason cotton flock is apt to produce a lower flock count than fibers that are uniformly straight.

Rayon flocks can be precision-cut because strands or filaments of uniform length and thickness are readily available. Rayon is thus ideal for the production of tightly packed flocks that reinforce and protect the adhesive.

Wool flocks generally exhibit the same handicaps that affect cotton flocks—ununiform length, thickness, and straightness. Wool is also more costly and is therefore used only when special properties of feel or appearance are required.

Hair flocks are predominantly linear in nature but vary considerably in length and denier. They tend to be coarse and harsh and are used mainly in protective finishes such as industrial carpetings and automobile floor coverings.

Flock Dimensions Important

Regardless of the source of the flock linters the ratio between length and denier has important effects on application, coverage, anchorage, and fabric utility.

Linters that are too long for their denier tend to curl or bend during the flocking operation, giving poor coverage. Short, thick linters disperse well but produce a very short pile.

It is also important that the flock be cut properly, because poorly cut flock presents an inadequate surface to

the adhesive, with resulting poor anchorage.

If flocks are white or very light pastel shades, adhesives have to be chosen that do not darken on exposure to light and are naturally light in color. Light-colored flocks do not pack as well as the denser darker flocks, and light-colored fabrics are therefore less resistant to sunlight.

Other factors that affect flock are sizing and moisture content. Some cotton flocks are sized to aid the cutting operation; and the sizing material may affect the deposition of flock. particularly where electrostatic methods of flocking are used. Excess moisture in the flock may cause it to form pills or balls, and in this condition the flock is virtually useless. Storage in original containers in an area of low humidity is recommended.

How Flock Is Applied

There are two basic methods of applying flock to fabrics. One depends on vibration, the other on electrostatic forces. In the vibration method, the base fabric coated with the adhesive passes over a series of beater bars that cause the fabric to vibrate rapidly. The flock is sifted down on the moving, vibrating fabric and is held by the adhesive. A certain amount of static charge developed by the vibration helps to orient the flock vertically to the adhesive.

In the electrostatic method of flock deposition, the flock is charged by passing through a high-voltage electrostatic field and is strongly attracted to the prepared cloth as it moves along a grounded conveyor. High flock counts and generally superior fabrics can be produced with this method. The equipment cost is somewhat higher than that used in the vibration process.

The time interval between applying the adhesive and deposition of the flock should correspond closely with the open time of the adhesive—the interval during which the adhesive is receptive to penetration by the flock. Adjustment of the time interval can be made by changing machine speed or varying the distance between the adhesive application point and the flocking area.

Curing the adhesive to provide a permanent bond between flock and fabric follows procedures worked out for the adhesive and fabric at hand. It is important to avoid shorter time intervals or lower temperatures than those recommended, or performance will suffer. On the other hand, if too high a temperature or excess time in the curing oven are used, degradation of both fabrics and adhesive can be expected.

Tips on Handling NYLON-6 Fiber

If you try to process nylon 6 all the way through the same way you process nylon 66, you're in for trouble. Main differences are in melting point and dye receptivity.

Here are some pointers on handling Nylenka, American Enka's tradename for nylon 6—

NYLENKA is produced from epsilon caprolactam by catalyzing the material and heating it to 158 to 176° F. The filtered mixture is passed through a polymerizing column at 500 to 518° F., where the polyamide of amino caproic acid is formed. The viscous mass is forced through jets at 482° F. and solidifies on contact with air. The tow is drawn, crimped, washed, finished, cut, dried, and baled as a continuous operation.

Continuous-filament Nylenka is made from rod-like formations of the polymer that are cut into chips, washed, and dried. The chips are melted on a grid and then spun into filament yarn.

Physical characteristics of Nylenka are similar to those of nylon 66 except that the melting point is 63° F. lower and dye receptivity is higher.

Most chemicals commonly used in wet processing will not damage Nylenka, although hot concentrated acetic acid and concentrated mineral acids will dissolve it. Some blends of solvents will also dissolve Nylenka.

Acetate, acid chrome, vat, and naphthol dyes will all dye Nylenka. In some cases Nylenka will absorb nearly twice as much color at up to six times the rate of absorption of nylon 66.

Processing Is Normal

Suitings and gabardines made of 20% Nylenka blended with viscose staple are common. Up to 35% acetate staple may be included in the blend. Automatic blenders are generally used to blend the fibers, which then are put through a picker having two Kirschner beaters. The lap is carded and the web spun to the desired yarn number. Conventional slashing and weaving procedures are employed to produce the fabric.

Before dyeing, unless the fiber content is definitely known, a check should be made to detect the presence of Nylenka if nylon fibers are suspected. The difference in dye absorption between Nylenka and nylon 66 is apparent when they are stained with any of several identification stains, such as those obtainable from Interchemical Corp., E. I. du Pont de Nemours & Co., Inc., and Test Fabrics Inc. It is important to know whether Nylenka or nylon 66 is present in order to adjust dyeing formulas.

From a paper presented at the Piedmont Section AATCC by Ross M. Stribling, American Enka Corp.

Dyeing Methods Are Conventional

Desizing with an enzyme solution suitable to the sizing material present is followed by a mild scour. Synthetic detergents, soda ash, and a sesquestrant are generally used at the boil, followed by a hot rinse. Dye formulas should be based on laboratory trials to allow for the higher affinity of Nylenka for most dyes. If direct colors are to be used on Nylenka-viscose blends, colors should be selected that do not stain Nylkena; or retardants such as soda ash (0.1%), Erionol NW (0.25 to 0.50%), Nyotan M (0.25 to 0.50%), or Resolin B up to 1% should be added to the bath. Retardants should be added prior to adding the dyestuffs.

Dyeing should start at 100° F., and then bath temperature is raised to 200° F. in 15 to 30 mins. Salt may be added after 10 to 15 mins. at top temperature, and sampling may start 15 mins. later. Color adds or more salt will bring the lot to shade, and then an overflowing rinse is given. Opening and extraction by conventional methods precede drying to prepare the goods for finishing.

Resin Finishes May Be Used

The usual resin finishes work well with Nylenka-viscose-acetate blends. Curing temperatures should be kept below 356° F., which is higher than is necessary to cure most resins.

Processing methods for carpeting, stretch hosiery, and full-fashioned hosiery are the same as for any nylon fiber or blends containing nylon. The principle consideration to keep in mind is that Nylenka is more receptive to dyes than nylon 66 and dye formulas have to be modified accordingly.

Georgia Mill Men Talk About WEAVING Equipment and Methods

At a recent meeting, members of Georgia TOE compared the performance of optional weaving equipment being used. They also matched notes on several weaving methods. The comparisons include—

Equipment:

- Bartlett let-offs
- Center forks
- Checkstraps
- Tying-in machines

Weaving Methods:

- Warp tension
- Loom speeds
- Shuttle life
- Cracks in corduroy

TEXTILE OPERATING EXECUTIVES OF GEORGIA made a breakdown of their results on optional equipment being offered for looms. They also gave details of other equipment they have added to improve their efficiency. In addition, they discussed several weaving practices that are leading to better fabrics.

Six mills are running Draper X-2 looms equipped with aluminum lays. The looms vary in width from 40 to 60 ins. The mills reporting on these lays say the lays have advantages over wooden lays. Reports of four mills are:

Mill A—"Aluminum lays are stronger than wooden lays. They are easier to align and keep aligned, and the checkstrap bracket stays tight better.

"The aluminum lay has an adjustable block in the outside end to set the depth of the shuttle in the shuttle box. This adjustment is better than the method of using packing behind the lay-end strap on wooden lays."

Mill B—"We have 44-in. X-2 looms with aluminum lays. Checkstrap brackets don't come loose as much as on wooden lays; and when they do come loose, they don't wear the lays. We also like the adjustable plug in the lay to set the shuttle depth; this adjustment is more difficult on wooden lays. The aluminum lays are lighter and reduce the load on loom motors."

Lay Alignment Is Easy

Mill C—"We run 50-in. X-2 looms with aluminum lays. The lays vibrate less and are easier to keep aligned. We have 400 looms with aluminum lays in operation and have had no trouble."

Mill D—"We have been running 96 40-in. X-2 looms with aluminum lays since 1948. We had a considerable amount of trouble with broken lays at first, but this trouble has been corrected.

"The big advantage of the aluminum lay is that it can be aligned better and more easily. Consequently shuttles last longer. Since 1948, we have averaged approximately 35-million loom picks per shuttle. During the same period, we have averaged only 20-million picks per shuttle with conventional lays."

Prefer Bartlett Let-Offs

Seven mills are using Bartlett let-offs on fabrics formerly woven with Roper let-offs. All mills report that Bartlett let-offs have greater advantages. Reports from six mills are:

Mill A—"A wider range of fabrics can be woven with Bartlett let-offs without changing the gears. Fewer worn parts have to be replaced."

Mill B—"The Bartlett let-off does not wear as much as the Roper let-off. It is also easily adjusted and gave better control of warp tension. In addition, it is better for heavier cloth construction."

Mill C—"The Bartlett let-off is much more positive. It lets off smoothly and controls higher-pickage fabrics and heavy beat-ups better."

Less Trouble With Bartlett

Mill D—"Bartlett let-offs are easier to clean and wear less than Ropers. There is less chance of the bearings binding and causing wavy cloth. The Bartletts are easier to set and have fewer parts."

Mill E—"When a Bartlett let-off is set up for a particular weave, it requires less manual adjustments than a Roper let-off. Maintenance expenses for both labor and parts are less."

Mill F—"Bartletts are easier to maintain and carry a greater load."

Mill G—"The Bartlett let-offs on our 60-in. dobby and 70-in. X-2 looms have positive action; and this action has helped us reduce wavy cloth and thick and thin places."

Mills Use Center Forks

Six mills are operating looms with center filling stop motions. Some of the mills have trouble with kinky filling at the fork. To overcome this defect, the mills:

1. Check the center fork at warp-outs and use gauges to make repairs and settings.

2. When a 1.50-weight fabric is changed to a 3.60-weight, for example, more tension is run on the filling in the shuttle. Tension is taken off the fork spring. For a permanent solution to kinky filling, the fork tension spring is replaced with a weaker spring. Then fabrics are changed from light constructions to heavy, and changed back, without kinky filling.

3. Apply more tension to the warp. Adjust the pick-motion power and the tension on the shuttle.

Tensiometers Don't Work Out

Five mills have experimented with tensiometers on cotton fabrics. The reports of the mills show that tensiometers are not practical for ordinary cotton weaving. However, two mills are presently using tensiometers: (1) they are used to check the tension on corduroy warps, and (2) they are used to check warp tension on special fabrics where nonuniform tension is apparent.

But for everyday weaving practices, mills check their warp tension by a

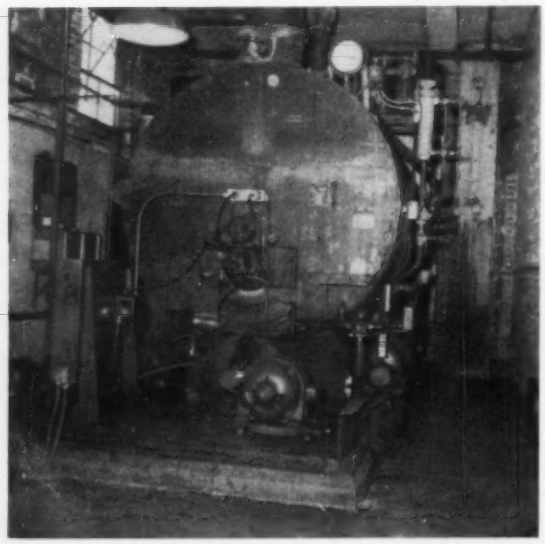
CONTINUED ON PAGE 186

SMALL MILL Ups Output 15%

Faced with stiffening competition and obsolescent machinery, the officers and superintendent of this small print-cloth mill came up with a successful plan that increased production 15% and cut labor costs. Features include—

- **Utilization of all existing mill space**
- **Gradual improvements to machinery**
- **Additional spinning frames and looms**

By MICHAEL LONDON



AUTOMATIC OIL-FIRED BOILER replaced the old coal-burning models. The remodeled old boiler room now houses the new boiler and the slashers, separated from the boiler by a brick wall. The new boiler is a Cleaver-Brooks 150-hp. model.

BAMBERG TEXTILE MILLS, Bamberg, S. C., has shown how a small mill with a limited budget can make enough improvements to keep competitive and stay in business. In 1953, faced with increasing competition and a mill equipped with relatively inefficient machinery, the officers and superintendent met to decide the fate of the mill. It was obvious that the Bamberg mill could survive only if its equipment were improved substantially to compete with larger organizations.

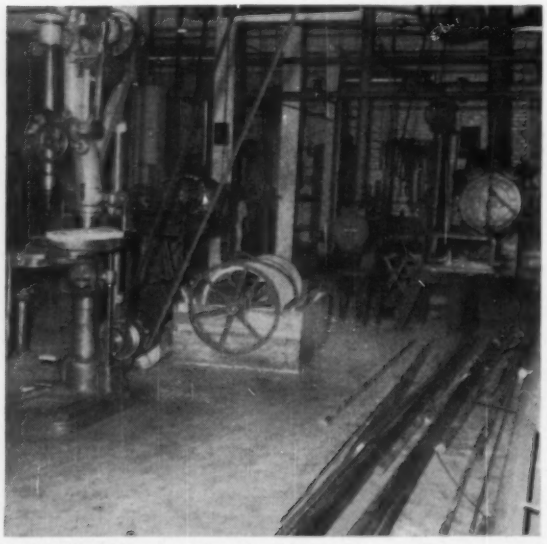
But was there enough money available to make the necessary improvements? This was the question the men faced. There was an answer, however—and a good one—because an expenditure of $150,000 has increased Bamberg's production 15% and reduced labor costs. Yarn production jumped from 44,000 to 51,000 lbs. per week after operations were improved.

The Bamberg mill, which produces print cloth from 30s and 40s carded yarns made in its spinning department, began operations in 1892. In 1920, it doubled its original size. It now employs about 300 people.

All Existing Space Used

The answer to Bamberg's problem lay in increasing production without enlarging the physical plant. It had to utilize all existing space and make enough changes to bring the equipment up to a competitive status.

Changes within the mill gave Bamberg the chance to use



MACHINE SHOP is located in the old engine room, which was unused for years. The old, worn floor was replaced with a new concrete floor. Also contained in the machine shop are air compressors, shown in the background.

CLOTH ROOM was formerly located in the weave room. Now housed in the old machine shop, the cloth room is better lighted and more efficient. The cloth-room move made space available for 53 additional looms.

space that had long been wasted. The old boiler room, which housed the old coal-burning boilers, was remodeled to accommodate the slashers and provide a place for a new automatic oil-fired boiler.

The old engine room, unused for years, had its old worn floor replaced with a new concrete floor and now contains the machine shop. The cloth room, formerly in the weave room, now occupies the space that was used for the old machine shop. This move made space available for 53 additional looms. The slashing operation was moved from the spinning room to provide extra space for more spinning frames.

The spinning room increased the number of spindles from 19,296 to 21,600. Looms went up from 420 to 473. Looms added were second-hand E Model machines, similar to the existing looms at the mill. Reasons for installing these looms were: (1) economy of initial outlay, (2) minimum number of machine parts required in stock, and (3) the advantage of using only one type of machinery.

All changes were made without any changes in opening, picking, and carding. The mill uses a 22-bale mix of 1⅛-in. Middling cotton. The fiber then goes to two one-process pickers. The card room has 44 cards, where cotton is carded at 10 lbs. per hr.

Drawing Rolls Improved Quality

The first change in the yarn-preparation line appears in drawing. Here Bamberg decreased the number of deliveries from 48 to 36 and yet increased production. Labor costs remain constant because it takes the same number of employees to operate an equal number of frames. Sliver quality has been raised, however, because the sliver is more uniform and cleaner.

Another advantage of the decreased number of drawing deliveries is the reduction of maintenance costs: it takes less maintenance for the reduced number of deliveries. Ideal rolls used on the frames have also reduced maintenance because of their ball bearings. Bamberg feeds eight ends up in both breaker and finisher drawing.

The Ideal rolls were installed in a pilot operation for several months to test their applicability for use at Bamberg, and other drawing equipment was observed at other mills. Performance of the rolls in the pilot operation finally sold management on the feasibility of the change.

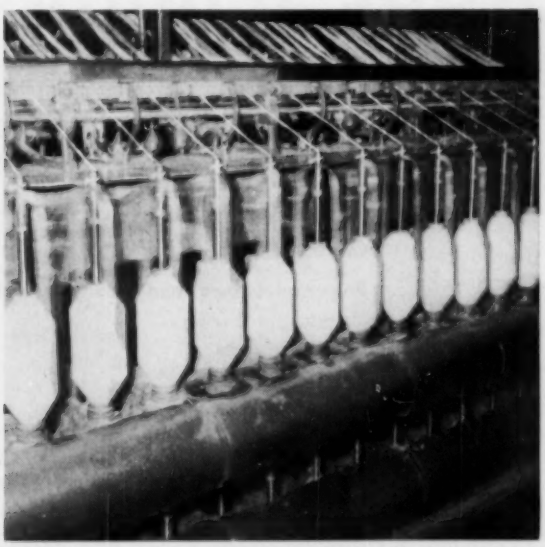
A switch to 10x5 packages on the roving frames allowed an increase in production with a decrease in roving spindles. Bamberg replaced 952 8x3¼ spindles with 648 spindles carrying the larger package. Packages were chosen as 10x5 because these are the largest that can fit in the creels on the narrow-gauge frames.

Maintenance has been made easier by the reduction in types of roving frames from three to one. The actual number of frames was reduced from 12 to 6.

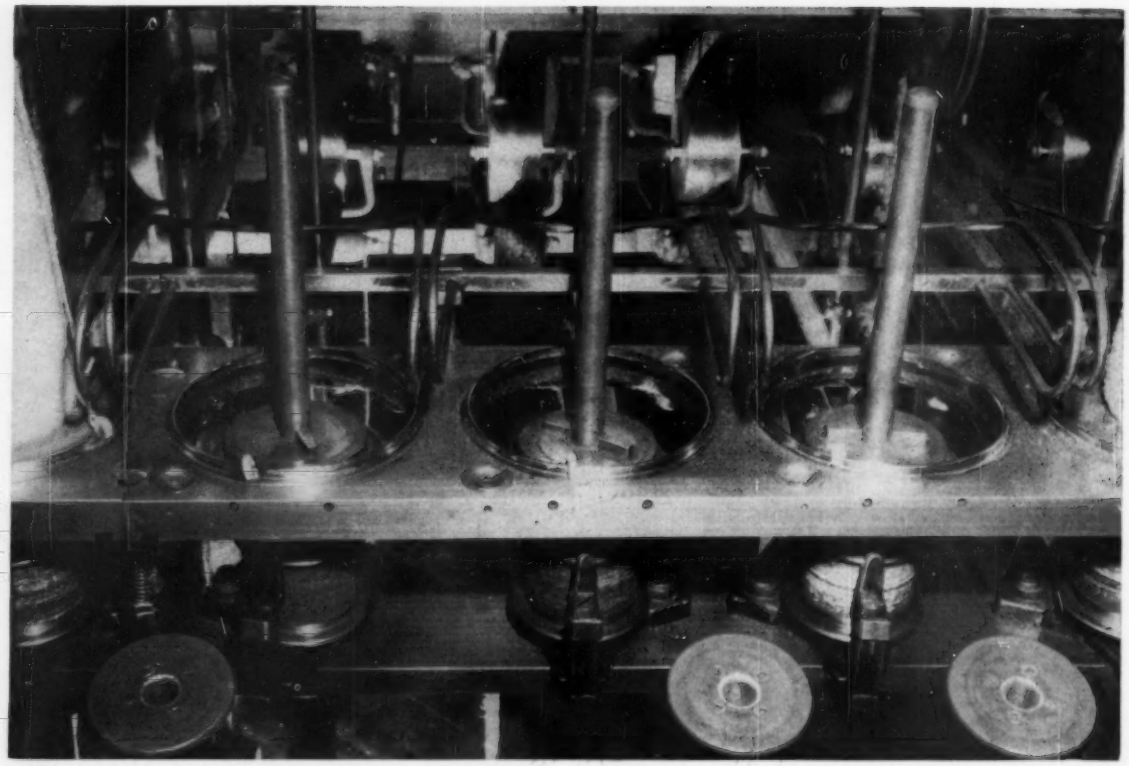
CONTINUED ON PAGE 190

SPINNING FRAMES are all being changed over to Roberts High Draft elements. The new drafting systems draft 30 to 32 compared with the draft of 18 used with old long-draft Casablancas system. Mrs. Juanita Black is changing from 8x3½ to 10x5 roving packages.

DRAWING FRAMES were decreased; yet production increased. Willie Buneh (left) and Superintendent John D. Jones discuss the Ideal drawing rolls that were responsible for the production increase. Sliver quality has also been raised.



ROVING packages were increased from 8x3½ to 10x5. The number of roving spindles was decreased from 952 to 648, and production rose. The different types of frames were reduced from three to one to ease maintenance.



TRAVELERS should be inspected and notations made regarding their condition. Yarn drawn through badly grooved travelers is often chafed and stained.

Preventive Maintenance Preserves
WOOL SPINNING FRAMES

The backbone of a preventive-maintenance program should be an inspection form listing relatively few inspection items per shift. Daily reports on the form will lead to closer coordination between departments. Things to look for include—

- **Discoloration at head-end points caused by lack of lubrication**
- **Correct installation of twister-head bands**
- **Proper adjustment and condition of clearers**

THE EFFICIENCY of your wool spinning frames tomorrow will be in proportion to the efficiency of your preventive-maintenance program today.

Based on a paper presented by Paul Thibault, Whitin Machine Works, before ASME.

A weekly inspection form should be the base of the program. The form should list relatively few items per shift. It should assist the present maintenance staff rather than create a new job, which increases the production cost with added nonproductive labor.

A daily report leads to closer coordination between the engineering and quality-control departments and the staff directly connected with the maintenance of each department.

Here are descriptions of some of the items contained on the inspection form.

The head-end gearing assembly requires a visual inspection that should include checking around gear-bearing or bushing areas for discoloration caused by lack of lubrication.

In checking chains for wear, guard against chain surfaces completely sealed with a heavy glue-type grease that causes light lubricants to be thrown off the chain before they can penetrate. Lack of lubrication may cause damage to working parts such as pins, sleeves, and bushings.

The direction of the twister-head rotation is not too important because all the false twist imparted is removed between the nippers and drawing rolls. However, when twister-head rotation is reversed because of improperly installed bands, the problem becomes serious. Improperly installed bands will chafe the band driving the twister head on the other side. The result will be loss of twister-tube speed and excessive wear on both bands.

Improper installations will also cause band hooks to lock, and many times they will wear through the cylinder. Replacement of a damaged cylinder involves hours of downtime and a substantial loss of production.

A visual inspection of the space between bands as they revolve on the driving cylinder is sufficient and does not require any downtime or dismantling of the frame.

Watch Fluted Rolls

Fluted rolls, either delivery or drawing, with a heavy coating of grease and lint will cause uneven yarn. Properly adjusted and well-maintained clearers should be considered a good preventive-maintenance measure. Replace clearer and scavenger-roll cloths when they are worn or frayed badly.

The traverse motions incorporated with the eccentric box assembly will give longer life to the steel rolls. They will also save substantially in the maintenance of single- and double-boss rolls if properly maintained.

Roving guides and thread guides at lappet boards should be properly adjusted, with any cracked porcelain being replaced immediately. These adjustments can be made without downtime.

Travelers should be inspected, and notations should be made regarding their condition. Yarn drawn through badly grooved travelers is often chafed and strained.

Twister heads require a regular and systematic inspection. Worn twister-head tops tend to cut yarn; and worn nippers do not hold yarn enough to impart twist in the drafting field, which causes uneven yarn and end breakage in the drafting field.

The central-lubrication system is a time- and labor-saving unit that requires little maintenance. A visual inspection of tubing leading to bearing points to check possible deterioration or breaks is sufficient. This damage would greatly reduce the pressure to each valve that is fed by the one-shot-lubrication system. If the location of the fracture prevents detection of the leak, an excessive accumulation of oil in the base and lack of pressure at the pump is usually a sign of a break in the oil line.

INSPECTION REPORT – WOOL SPINNING – DEPT. _____

INSPECTOR _____ WEEK ENDING _____

	Frame Nos.							
	1	2	3	4	5	6	7	8
MON.								
Head end gearing								
Chain alignment								
Chain lub. Inspection								
Proper direction of twister hd. bands								
TUES.								
Top & bottom roll clearers								
Traverse motion top & bottom								
Roving guides & thread guides								
Spot check travelers for wear								
Twister head nippers & tips								
WED.								
Head end Bijur oil system								
Spdle. setting spot check and runout								
Bobbin build								
Proper lub. tail end drum drive								
Auto. builder doffing mech.								
THURS.								
Spot check motor clutch								
Rev. chain setting								
Sq. shaft pulleys free of waste								
FRI.								
Spot check alignment (4) head end change sprockets								
Spot check bushing bolster rail								
Proper lub. main shaft housing								
Tape tension pulley settings								

If repairs are needed, state recommendations: _____

INSPECTION FORM should list relatively few items for inspection each shift. It should assist the present maintenance staff rather than create a new job. The report should lead to closer coordination between the engineering and quality-control departments and the maintenance-department staff.

Causes of Bad Bobbin Build

Properly built bobbins play an important part not only in the spinning process but also later in direct warping and high-speed winding. There are many causes of improperly built bobbins. One of the most common causes is where the variable cam is not properly adjusted.

Another cause is excessive builder-cam speed, especially on the finer yarn numbers, that tends to wind yarn at too great an angle and decreases the yards per bobbin. Subsequently a loss in production is caused by added doffing and creeling times in all departments using direct creeling with frame bobbins.

If builder camshafts or cams are loose, there is sloughing in rewinding; usually this fault immediately brings about a complaint from the dressing department. The complaint usually includes a request for smaller-diameter bobbins to overcome the sloughing; but this is not the most efficient method for correcting the problem because it may add five to seven doffs per frame per week.

Proper preventive measures such as adjusting the present cam assembly or replacing it with a new-style cam will increase spinning efficiency and cut down breakage caused by sloughing in direct warping and winding.

Loom-Action Abrader Evaluates WARP SIZES

• Initial tests on a loom-action abrader developed at Georgia Tech indicate that the effect of warp-sizing formulas on weavability of yarn can be tested in a laboratory. If the abrader works out, you can possibly eliminate up to 40% of all your warp breaks.

NO METHOD has yet been adopted as a standard for determining the effectiveness of a sizing compound on the weavability of yarn. The most positive way of accomplishing this task is to undertake full-scale loom operations. Obviously that is not particularly acceptable because it is expensive in time and effort.

Many devices and techniques have been proposed as solutions to this problem. However, because of disadvantages ascribed to each, none are as yet widely accepted. Our present development has resulted in an apparatus that very nearly emulates the loom actions that affect the warp yarn functionally as well as quantitatively.

The weaving properties of yarn are influenced by factors other than sizing formulas. For instance, a study by B. J. Brown (published in *Journal of The Textile Institute*) gave rise to a classification of the nature and incidence of warp breakage, as shown in Table 1. Although 15% of the 33.8% is definitely established as of unknown origin, a good portion of the remaining 18.8% can be attributed to sizing either directly or indirectly. Consequently as much as 40% of all yarn breaks could be assigned to sizing compounds.

Eliminate 40% Warp Breaks

Ideal formulas could thus theoreti-

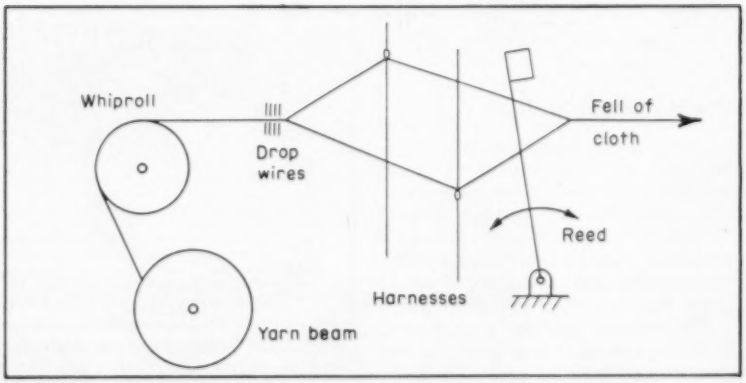


Fig. 1. Cross section of actual loom showing the points at which most yarn abrasion takes place during weaving.

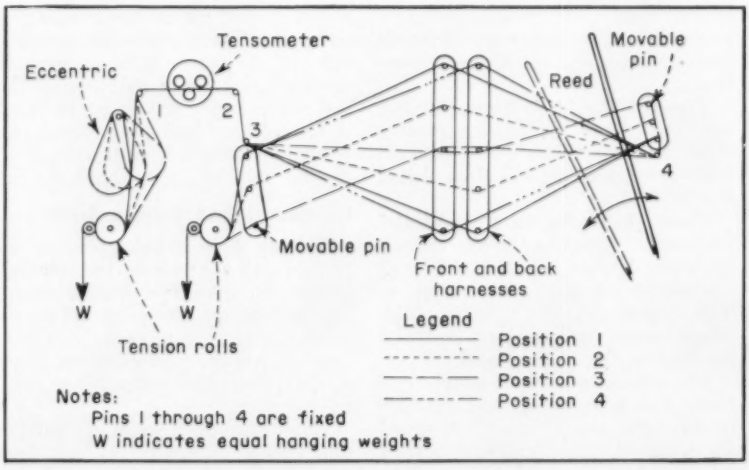


Fig. 2. Laboratory abrader, shown here with harnesses in four positions, duplicates the abrasive action on yarn that occurs in the loom during weaving.

From a paper presented by R. P. Ramirez and J. P. Vidosic, Georgia Tech, at a recent meeting of the Textile Division, American Society of Mechanical Engineers, in Atlanta, Ga.

TABLE 1—CAUSES OF YARN BREAKS

Warp Breakage	Percent of all breaks
Attributed to sizing	24.7
Not attributed to sizing	41.5
Unknown	33.8

TABLE 2—ACCURACY OF TESTS

Sizing Material	Mean number of cycles to breakage	Standard deviation from mean	Average tensile strength in grams	Elongation
Light	554	13.5%	360	4.9%
Medium	651	9.2%	340	4.8%
Heavy	762	15.4%	345	4.6%

CHANGES IN SIZING, Column 1, were more accurately reflected by the abrader tests, column 2, than by such standard tests as strength and elongation.

cally eliminate 40% of the yarn or end breaks. To develop such formulas, an effective abrader is needed—one that will rapidly and accurately assess the great number of formulas that must be tried. The loom-action abrader is not claimed to be the final answer; nevertheless, preliminary test results (from an unpublished thesis by R. P. Ramirez, Georgia Tech) indicate its potentialities.

Before the design of the loom-action abrader, an investigation of every abrasive and tensile action of any consequence was carried out on a standard weaving loom (from an unpublished thesis by C. W. Kennedy, Georgia Tech).

The results obtained were checked carefully, and those that appeared well founded were employed in the quantitative design of the abrader. The actions studied involved (1) the tension variations on a single end for a complete harness cycle, (2) friction effects on the single end at all locations where either longitudinal or lateral rubbing existed, and (3) lateral rubbing of warps occurring when the two harnesses pass the closed shed.

The line diagrams of Figs. 1 and 2 show the similarity of action between the loom-action abrader and an actual loom. To make tests rapidly, a simplified threading technique was devised for the abrader. A single end of yarn is trained over and under pins and rollers and follow the path shown in Fig. 2. Each end of yarn must be long enough for three complete threading cycles. Thus the device abrades the equivalent of six ends for each setup.

How the Abrader Works

The lines in Fig. 2 show the operating cycle of the abrader. Position 1 shows the harnesses with the shed open.

In Position 2, the harnesses have been partly displaced—one upward and the other downward—and the eccentric has swung counterclockwise to take up the slack resulting from the movable pins.

In Position 3, the harnesses are level and both the movable pins and the eccentric have assumed their maximum rotation. The harnesses then dwell for an instant while the reed beats up the filling.

The second half of the harness cycle is a reverse repetition of the first half. In addition, however, a pawl-and-rachet arrangement concomitantly releases and draws the warp through the tension rolls at a rate of 1 in. per 45 picks. This action repeats at a speed of 155 cycles per minute. The loom-action abrader is actually a miniature loom without shuttle action.

Make Tests on Sizes

The experimental procedure entailed in evaluating the abrader consisted of testing numerous ends of sized yarn. All the yarn tested was 22s cotton. Light, medium, and heavy sizing compounds were used. A record of the number of harness cycles required to break each sample was kept. In addition, several tensile-strength tests were made. With the data from the abrader, standard deviations and cumulative frequencies were determined.

The results shown in Table 2 clearly indicate that such static tests as percent elongation and tensile strength are not sensitive enough to sizing changes to warrant their use in assessing the weaving qualities of a sized warp. The resistance to abrasion, on the other hand, does appear quite sensitive to sizing changes. Therefore, indications are that loom-action-abrader results could serve as a more accurate guide to the weavability of yarn than present tests.

A narrow and considerably regular standard-deviation percentage from the mean is noted from the data obtained with the loom-action abrader, Table 2. It is obvious that if a combined stress-abrader tester is to be reliable in evaluating sizing compounds, it must closely reproduce the action that a warp will normally undergo in the weave room. Then the full development of this abrader should provide a valuable addition to textile testing equipment.

Liberty's New
HOSIERY-INSPECTION Method

Liberty Hosiery Mills, Liberty, N. C., has a new system of inspecting full-fashioned hosiery. With the installation of automatic inspecting machines, inspectors do their work standing. Results are—

- **Better working conditions**
- **Better inspection job**

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

INSPECTORS of gray full-fashioned hosiery sit down to do the job in most mills; but Liberty Hosiery Mills, Inc., Liberty, N. C., has found that their inspectors are more comfortable standing at the job. They are also able to do a better inspection because they can see better from a standing position. Inspectors keep cooler, and their body motions are not as great as when they were seated.

The new system was started when 16 Inspectomatic machines, built by Specialty Manufacturers & Sales Co., were installed last summer.

The machines are laid out in rows of four in a large air-conditioned room next to the seaming section. The machines are back to back with a wide aisle between each row for servicing. Each machine has two ½-hp. motors and is plugged into the 110-v. overhead light fixtures.

Lighting Is Important

Ideal lighting conditions are provided by a continuous row of fluorescent lamps suspended about 5 ft. from the floor. The correct amount of light was calculated to give ample light for inspection but not enough to cause glare from the hosiery stretched on the form. Each operator stands on a rubber mat in the center of the working area.

The working area is actually a complete unit consisting of tables for work to be inspected, a stand for the dye bag to receive the inspected goods, and hampers for the empty and full dye bags. All the accessories and the inspecting machines are covered with green cloth to reduce picks and pull threads.

The goods from the seaming section are delivered by the service girl in cloth-covered trays to the tables on the left side of the inspector. Stockings are carefully transferred to a stand with the side nearest the inspector cut away to eliminate snagging. The welts are laid out at the top of the stand close to the end of the inspecting form with the seams away from the operator to facilitate handling.

Stockings Are Pulled Hard

Inspectors draw the stockings taut on the form to pull out any possible defects that might remain unseen under normal conditions. The stocking is inspected for picks, pulls, and knitting and seaming defects.

Perfect stockings are drawn through the hollow form to be turned inside out. The stockings pass through a plastic tube to operate a switch to count the stocking and start a mechanism to grasp the toe and lay the stocking on a semicircular tray in front of the operator.

Each perfect stocking is recorded on a counter on the machine. At the completion of 1 doz. pairs of stockings, a red light flashes and the dozen is folded and laid in a dye bag stretched open on a frame behind the operator. In addition to recording each dozen, the counter records the dozens in each lot up to 99 doz.

When three complete dozens have been placed in the dye bag, the bag is tied with a colored looper clip. Each color denotes a different size to prevent mistakes after dyeing.

Dye Bag Is Stamped

Each inspector carries a rubber stamp; and the style, color, and size are stamped on each bag for rapid identification at the dyehouse. The bags are then placed in large hampers at the inspector's right side for collection by the service girl.

Stockings that are not perfect are withdrawn from the form without being turned and laid on top of the inspecting machine in their respective container according to the fault classification. At the completion of the lot, the irregulars are placed in compartments in a broad tape and collected by the service girl.

Two service stations are located at the ends of the inspecting-machine rows. One girl at each station distributes and collects work from the machines in her two rows. These girls attach colored tickets to the batches of irregulars to clearly indicate the fault category. The tickets are round to eliminate sharp edges that might cause pull threads.

Knitters' and seamers' faults are returned to the knitting or seaming room for replacement.

Work Is Rechecked

Work is checked from every inspecting machine several times each day on conventional hand forms. A hand form is used because stockings are not turned. An incentive system keeps inspectors on their toes.

Seamers work on a similar quality incentive basis. If more than the standard allowance for faulty work is found in seamers' and inspectors' work, a deduction is made in piecework rates for each dozen produced during the week.

This system coupled with the improved output from the automatic machines keeps quality at Liberty Hosiery Mills at a high standard and results in fewer imperfects that might go through later operations.

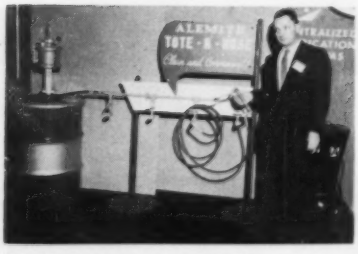
COMPLETE INSPECTION UNIT consists of inspecting machine, tables, hampers, and a frame for the dye bag. Operator stands on mat within easy reach of all accessories.

LIGHTING is such that operators are not blinded by a glare and yet are able to do a good inspecting job. Machines and accessories are covered with green cloth.

SERVICE STATIONS are located at the end of each two rows of machines. Irregulars and mends are collected in the compartments in the tape and labeled with round tickets.

PLANT-MAINTENACE SHOW
Offers Improved Equipment

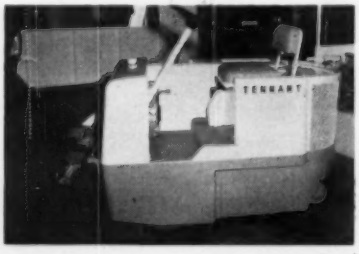
- The Seventh Annual National Plant Maintenance Show came back to Philadelphia late in January after an absence of four years.
- Improved equipment was shown by 372 exhibitors. More than 18,000 people viewed the exhibits that offered opportunities for higher plant efficiency.



Power Lubrication System

Tote-A-Hose, a power lubrication system, was shown by Alemite Div., Stewart-Warner Corp., Chicago, Ill. This system consists of a supply pump, a pipe line, quick disconnect coupler and shutoff-valve assemblies in the pipe line near the bearings to be lubricated, and a hose and control-valve assembly. The lubrication man totes the hose and control-valve assembly from station to station.

Lubricant under pressure is always available at all stations. The lubrication man merely snaps the fitting into the coupler, opens the valve, and lubricates bearings by applying the control valve to the fittings to be greased. **(A-1)**

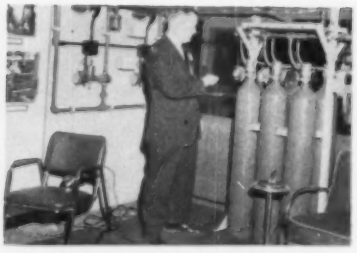


Floor Sweeper

The Model 50 floor sweeper, shown by G. H. Tennant Co., Minneapolis, Minn., is rider-operated and has a 28-in. main brush, supplemented by a side brush that extends the sweep to 38 ins.

A second machine, Model 40, incorporates the major features of the larger model except that it is a walk-behind type. Model 40 is available with or without the side brush. **(A-2)**

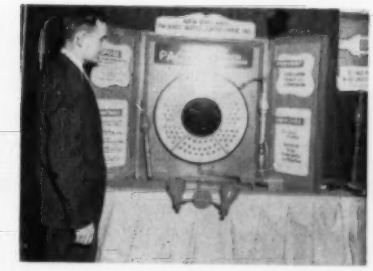
A line of polyphase motors in NEMA frame sizes 182 through 326 were shown by Wagner Electric Corp., St. Louis, Mo. The motors are three-phase, 60-cycle, 1,750 rpm. **(A-3)**



Fire-Extinguishing System

A pressure-operated carbon-dioxide fire-extinguishing system was on display at the booth of Walter Kidde & Co., Inc., Belleville, N. J. The highly flexible system operates on a rate-of-temperature rise principle and employs carbon dioxide under a pressure of 850 psi. both for its power and as its fire-extinguishing agent. The apparatus is entirely self-contained and requires no outside power source.

All operating parts are completely enclosed and are not subject to fouling or accidental operation. There are no parts to replace after the apparatus operates. Visual inspection determines if the cylinders have been operated. **(A-4)**



Water Conditioner

An apparatus (arrow) to prevent hard water, scale, and corrosion in water supply lines was shown by Packard Water Conditioner Div., Inc., Packard Mfg. Co., Jacksonville, Fla.

The conditioner prevents scale and corrosion by imparting additional energy to the atoms of the water solution. There are no moving parts, and therefore maintenance is eliminated. When the conditioner is used, costly shutdowns for cleaning and descaling are ended. **(A-5)**

Stand for Threading Pipe

A portable stand for threading pipe was demonstrated by Beaver Pipe Tools, Inc., Warren, Ohio. The stand has a wrenchless chuck that moves forward or in reverse. The gears of the chuck are fully enclosed and are lubricated for the life of the chuck.

The chuck can also be bought separately and can be used to modernize your old production machinery. With the chuck, you just turn a handwheel to tighten the work. Then you turn on the motor. The chuck handles pipe of ⅛ to 2-in. dia. and rod of ¼- to 2-in. dia. **(A-6)**

A noiseless vacuum cleaner was shown by Ponsell Floor Machine Co., Inc., New York, N. Y. The portable machine removes dry materials and liquids such as water, soapsuds, etc. **(A-7)**

Water Cooler

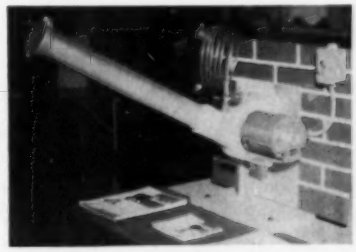
A cooler for drinking water shown by The Ebco Mfg. Co., Columbus, Ohio, also has a unit for heating water. The model, called Oasis Hot'n Cold, immediately furnishes 20 6-oz. cups of piping-hot water for mixing instant coffee or other hot drinks. An additional 40 cups may be drawn within 1 hr.

The cold-water unit is capable of producing 13 gals. of water per hour under average summer conditions. The combination hot- and cold-water cabinet weighs only 160 lbs. and is 45 ins. high, 15⅛ ins. wide, and 15⅛ ins. deep. It operates on 115-v. a.c. current. **(A-8)**

Hand-type cleaners with ¾- to 1½-hp. motors were exhibited by Ideal Industries, Inc., Sycamore, Ill. The cleaner can be used to blow, vacuum, spray, and dry. **(A-9)**

Drum Warmers

Drum and kettle warmers said to be 50% cheaper than pipe coils were shown by Thermo-Panel Div., Dean Products Inc., Brooklyn, N. Y. The units are available in various sizes and shapes and can be used to warm or cool liquids, slurries, soaps, waxes, alkalis, powders, fats, oils, etc. The panels are easy to use and clean. **(A-10)**



Lamp Disposal Unit

A disposal unit for fluorescent lamps was shown by Laduby Co., Inc., Bradford, Conn. The small mechanism is mounted against the inside wall of a building.

The unit has a ½-hp. motor and a tank that holds 7½ gals. of water. The used fluorescent tube is inserted inside a small cylinder and is then broken inside the water chamber.

The broken glass is deposited directly inside a rubbish barrel outside the building. The machine disposes of 3,000 to 4,000 lamps a day without danger of glass dust or obnoxious odor. **(A-11)**

Brushes with nylon bristles for power sweepers were shown by E. I. du Pont de Nemours & Co., Inc., Polychemicals Dept., Wilmington, Del. The brushes are said to have stood up under daily use sweeping 12,000 sq. ft. of factory floor space for a period of eight months with less than $\frac{1}{16}$-in. wear of the bristle. **(A-12)**

Vacuum Cleaner

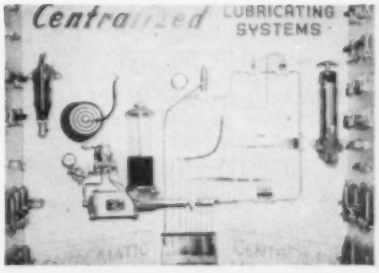
A 7½-hp. vacuum cleaner, strong enough to pick up nuts, bolts, liquids, sand, metallic litter, or almost any material small enough to pass through the vacuum line was shown by Invincible Vacuum Cleaner Mfg. Co., Dover, Ohio. Known as Model 700, the cleaner is mounted on a rubber-tired, ball-bearing swivel-wheel carriage that can be moved easily through narrow aisles. **(A-13)**

Pipe-Bending Tool

A complete portable tool for bending pipe was demonstrated by Blackhawk Mfg. Co., Milwaukee, Wis. The hydraulic unit bends pipe from ½- to 2-in. dia. and makes any radius bend you want.

You just set the tool gauge to bend any radius from −15° to 105°, and the pipe is bent accurately. Since the bending frame is made of aluminum, it weighs only 16½ lbs. and is easily carried up ladders or to other hard-to-get-to places. **(A-14)**

An all-purpose steel framing material, shown by Acme Steel Co., Chicago, Ill., is used for shelving, racks, conveyor mounts, bins, carts, dollies, machine and belt guards, machine and motor mounts, ladders, scaffoldings, and tables. Slots and round holes are spaced at 3-in. intervals for rapid assembly. **(A-15)**



Lubrication System

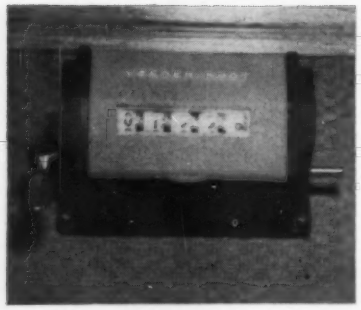
An automatic air-operated system for simultaneous lubrication of production machines with a maximum of 170 bearings was shown by Lincoln Engineering Co., St. Louis, Mo. The system consists of an air-operated single-stroke pump. The body of the pump serves as a convenient bracket for mounting the pump on a machine. The pump can easily be refilled by a button-head fitting in the body or through an oil cover at the top of the reservoir.

The device dispenses fluid lubricants at predetermined time intervals through a single supply line to a circuit of lubricant injectors or measuring valves mounted on the machine singly or in manifolds of two to five valves. Dimensions: 18¼x5¾x16 ins. **(A-16)**

A line of steam-cleaner jennies was shown by Hypressure Jenny Div., Homestead Valve Mfg. Co., Coraopolis, Pa. One model operates at 80 to 120 psi. and dispenses 90 gals. per hr. **(A-17)**

Concrete Saw

A saw to cut concrete floors was shown by Clipper Mfg. Co., Kansas City, Mo. The saw can be handled by one man and is made to remove concrete strips for conduit lines and to cut out worn areas in floors. **(A-18)**



Predetermining Counter

A substractive predetermining counter with quick reset features was shown for the first time in the U. S. by Veeder-Root, Inc., Hartford, Conn. The counter is similar in principle to the conventional cut meter except that the recycle does not have to be turned by hand. A slight touch on a small lever resets the device in a split second. **(A-19)**

Safety Floor Covering

A plastic composition material that prevents slipping on outdoor ramps, washrooms, oily floors, and other slippery surfaces was shown by American Abrasive Metals Co., Irvington, N. J. Other textile-plant applications are said to be around woolen combers.

Colors are tile-red, blue, green, gray, and black. The coating is packed in 1- to 5-gal. cans. The cost is $8 per gal. for 1 to 4 gals. and $7.70 per gal. for 5 to 50 gals. **(A-20)**

Driver-ride power trucks designed for floors with low load ratings were shown by Colson Corp., Elyria, Ohio. Known as Colsomatic, the truck has a gas-engine power plant that weighs less than an equivalent battery-driven unit and is cheaper to operate. The machine is compact for tight turns in narrow aisles. Drive is hydraulic with Uni-Lever. Power unit can be replaced in 10 mins. if necessary.

Trucks are obtainable in 4,000-lb pallet and platform models, 800-lb. draw-bar tractor models, and 11½-ton trailing-load models. **(A-21)**

Stud-Driving Tool

A hand-driven tool that drives ¼ in. conical studs through metal with only one blow of a hammer was shown by Hilti Rapid Fastening Systems, Inc., New York, N. Y. The tool is also used to drive studs and pins into other materials such as concrete, brick, and cement.

Five models of the tool are available, and they cost from $14.95 to $33.75. The tools weigh 1¼ lbs. or 2 lbs., according to the model. **(A-22)**

A motor with its winding encapsulated with epoxy resin was shown by General Electric Co., Schenectady, N. Y. The casing protects the winding from moisture, lint, abrasives, and chemicals. New motors with this casing are not available at this time, but any GE service shop can apply the resin to old motors at the time of reworking.

A recording hook-on voltage ammeter also was displayed by GE. **(A-23)**

Convert Drill to Hacksaw

A hacksaw attachment for electric or air drills was demonstrated cutting metal and wood by Thor Power Tool Co., Aurora, Ill. The blade of the saw has a sharp point and will start its own hole in wood, plaster, or composition material.

To change a blade in the tool, you just loosen two hollow-head setscrews. The adapter can be chucked in any ¼ in. or larger chuck. The price of the tool is $45; blades cost $2.65 per package of 10 to $3.95 for 10, according to size. **(A-24)**

Power Air Exhauster

A power air exhauster designed for roof application was shown by Proctor & Schwartz, Inc., Philadelphia, Pa. The exhauster employs no belts or pulleys and utilizes a 1½- to 5-hp. electric motor. Exhaust air is blown up and away from the roof. **(A-25)**

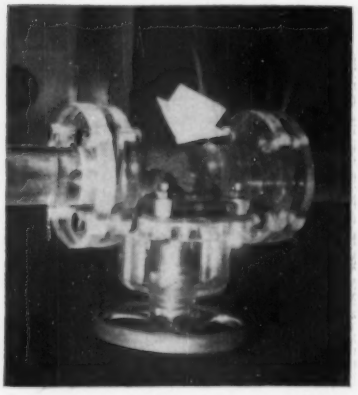
A self-drilling expansion shell that can be driven into concrete with a 2-lb. hammer was shown by Phillips Drill Co., Michigan City, Ind. It is not necessary to remove these flush shells during drilling because cuttings pass through the core of the drill. It is advisable, however, to blow out the hole with a rubber bulb or tubing. Then insert tapered end of expander plug into the hole, and drive the shell home until the chuck is flush with the concrete surface. Break off the chucking end of the shell flush with the concrete, and you can anchor heavy weights to your concrete wall. **(A-26)**

An automatic, noiseless, dripproof device for cleaning painted walls that cuts cleaning time 75% was shown by Quaker Maintenance Co., Inc., New York, N. Y. The cleaner, called Wallmaster, has two tanks; a gallon of water in one tank and a gallon of diluted Wallmaster cleaner in the other last 8 hrs. **(A-27)**

Winch Hoist

A two-ton winch hoist with extra strength, reach, and safety features was shown by Lug-All Co., Haverford, Pa. One man can carry and rig the hoist. There is a reversible safety handle that bends before the hoist is severely overloaded; there is no brake or clutch to slip; and an interlocking pawl system gives positive control. Open construction makes cleaning easy. **(A-28)**

Prefabricated industrial floors and anchor plates were shown by Stelcon Industrial Floors, Inc., New York, N. Y. The prefabricated slabs, for heavy-duty use, combine doubly reinforced subfloor and wearing surface; at the same time they are mobile. The steel anchor plates can be installed easily and economically in either new or monolithic floors or in toppings on old floors. **(A-29)**



Diaphragm Valve

The Grinnell-Saunders diaphragm valve, which lifts the diaphragm (arrow) high for full flow in either direction and has no pockets to trap sludge, was shown by Grinnell Co., Inc., Providence, R. I. The valve is especially useful for handling fibrous slurries, viscous materials, solids in suspension, sewage, and corrosive chemicals. Rodding and bushing are practical without removing the bonnet; this feature prevents damage to the body linings. **(A-30)**

A silicone-coated glass fiber covering for surfaces subject to sticky materials was shown by Raybestos-Manhattan, Inc., Manheim, Pa. **(A-31)**

For more information, circle the A-number on Reader-Service post card.

Build your own storage racks. Structo System, Elyria, Ohio, showed lengths of Structo steel angle iron and ⅜-in. bolts that can be assembled with a socket wrench into shelving, platforms, partitions, tables, or benches. All you need are lengths of Structo material and supplies, and you are in business. No detail drawings or engineering advice are necessary. **(A-32)**

Neoprene-Sealed Casters

Grease-sealed casters with neoprene vulcanized retainers were shown by Faultless Caster Corp., Evansville, Ind. The neoprene grease seal holds the lubricant in and keeps dirt and water out of the swivel bearing.

The thrust-bearing grease-retaining cup provides protection against leakage and keeps the lower ball race free of dirt and moisture. The wheel-bearing neoprene seal locks in the lubricants and assures free rolling of wheels. **(A-33)**

A seal for wood floors was demonstrated by Vestal Chemical Laboratories, Inc., St. Louis, Mo. The seal penetrates the cells in the wood to form a solid mass that prevents wear. It also prevents the absorption of moisture, grease, oil, and dirt. **(A-34)**

Shatterproof Window Panes

A window pane that can be dropped, stepped on, or even nailed into place was introduced by Corrulux Div., L-O-F Glass Fibers Co., Houston, Tex. The panes are manufactured in seven stock sizes, conveniently packaged, and come in Maxlite or Skylight Green, colors engineered to give diffused daylighting with minimum eye fatigue. Smooth or crinkled finishes are available . **(A-35)**

A low-cost 4x4-ft. safety tower for overhead-maintenance work was shown by Safway Steel Products, Inc., Milwaukee, Wis. Made of high-carbon tubular steel, the rolling tower is designed to safely support loads up to 50 lbs. per sq. ft. at the cost of a comparable wooden structure. The tower rolls from job to job on big positive-locking swivel casters and is equipped with a built-in ladder and guard rails. **(A-36)**

Air Compressor

A rotary air compressor featuring a multithrust rotor blade and a contour-bored stator arrangement was featured by Davey Compressor Co., Kent, Ohio. The compressor is made in several models from 2 to 5 hp.

The machine is said to: (1) have few working parts, (2) give constant peak efficiency, (3) provide continuous cooling, (4) deliver maximum air, (5) be light in weight, and (6) be free from vibration. **(A-37)**

An electronically operated tractor that requires neither an operator nor physical connectors was shown by Barrett-Cravens Co., Northbrook, Ill. The tractor, called Guide-O-Matic, moves in a steady path at a predetermined speed to its destination.

Radio waves transmitted through a guide wire to an electronic "sniffer" box start and stop the machine. The tractor will not stray from its path and travels at a safe speed for workmen in the area. **(A-38)**

Braking Controller

An electrical braking controller that almost instantly stops production machines was shown by Westinghouse Electric Corp., Pittsburgh, Pa. The controller, called DynAC, is especially suitable for use on textile machines that tend to coast during the normal braking period and waste yarn. **(A-39)**

Locks for tubes in all standard fluorescent lighting fixtures were demonstrated by Laduby Co., Inc., Branford, Conn. The locks are easy to install and protect against falling lamps, personal injury, and material spoilage. And because vibration is reduced with the locks, lamp efficiency is increased. The locks range in price from $6 to $10 per hundred, and free samples are available. **(A-40)**

Visible Records

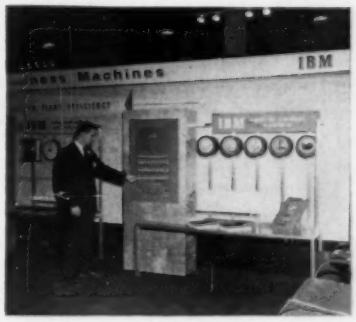
Visible control boards and filing cabinets were shown by Acme Visible Records, Inc., Crozet, Va. One new panel has signals that slide back and forth over each other without interference. A personnel in-and-out panel was offered for $7. Another new item is a control panel with pockets to hold 30- and 44-in. cards. **(A-41)**

A steam trap said to practically elminate maintenance was shown by Sarco Co., Inc., New York, N. Y. The same trap can be used for pressures of 10 to 600 psi. It closes tight on no load and operates against back pressures up to 50% of inlet pressure. **(A-42)**

Metal-Cutting Tool

A portable metal-cutting tool, somewhat like a portable electric drill in appearance and design, was shown by Fenway Machine Co., Inc., Philadelphia, Pa. There are three models of the tool: (1) cuts 8-gauge mild steel and 10-gauge stainless steel, (2) cuts 13-gauge mild and 14-gauge stainless steel, and (3) cuts 16-gauge mild and 18-gauge stainless steel. Prices of the three tools are $349, $165, and $119. **(A-43)**

A portable drilling machine to drill holes in concrete, tile, stone, or other masonry was shown by Wheel Trueing Tool Co., Detroit, Mich. The machine drills holes ½ to 4½ ins. in diamether and up to 18 ins. deep for conduits, pipes, service lines, sewer lines, etc. **(A-44)**



Central Control System

A central control system to actuate on-off operations automatically without special control wiring was operating in the booth of International Business Machines Corp., New York, N. Y. The control system will operate as many as 40 on-off functions such as switching on lights, starting and stopping motors, and opening and closing valves.

Another use for the control system is for remote control of heating and air conditioning. With this setup, motors are switched on and off automatically on a predetermined weekly schedule with special schedules programmed for each day of the week. **(A-45)**

An improved industrial floor-drying material was shown by Eagle-Picher Co., Cincinnati, Ohio. You just scatter the material over oil, water, or chemicals; and the liquid is quickly absorbed. **(A-46)**

CONTINUED ON PAGE 191

For more information, circle the A-number on Reader-Service post card.

New Data on—
How 8 Fibers Compare In CHEMICAL RESISTANCE

How much strength is lost when a fiber is treated with a chemical?

Now—for the first time—an answer to this question is available for 8 fibers and 53 chemicals.

By J. F. deBORDENAVE and D. J. BRINGARDNER,
Technical Service Section, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc.

BROADER COMPARISONS of fiber-strength loss of eight different fibers treated with 53 different chemicals are now possible. Data for making these comparisons were obtained in a research project planned and sponsored by Du Pont and carried out by the School of Textiles, North Carolina State College. All tests were done on single filaments or fibers. These chemical-resistance data reflect the results of one phase of a broad program to develop comparative physical and chemical properties of eight fibers.

Fibers studied were:

Acetate	Rayon
"Dacron" polyester fiber	Cotton
Nylon	Silk
"Orlon" acrylic fiber	Wool

Chemicals used were:

Mineral acids	Salts
Organic acids	Bleaching agents
Alkalis	Reducing agents
Detergents	Organic solvents

Miscellaneous chemicals

How Samples Were Selected and Prepared

The yarn, staple, and tow samples of Du Pont fibers were representative samples of commercially produced fibers as made at Du Pont plants during the month of August, 1954. Where available, high-tenacity fibers were selected for the chemical-resistance phase of the program because it was felt that chemical environments are more often encountered in the use of high-tenacity fibers.

The filament yarns were shipped to N. C. State College on regular shipping packages. The natural-fiber samples (cotton, silk, and wool) were obtained by the School of Textiles, N. C. State College.

Prior to testing and chemical exposures, 120-yd. skeins of yarn and fairly large bundles of staple and tow were loosely wrapped in cheesecloth and scoured for 1 hr. with mild agitation in scour baths containing 0.1% (based on weight of bath) Duponol WA flake surface-active agent. The scour baths for silk and wool were adjusted to pH 10 with sodium carbonate. Scouring temperatures for the various fibers were:

180° F. for acetate

212° F. for Dacron, nylon, Orlon, rayon, cotton, and silk

130° F. for wool

After scouring, the fibers were thoroughly rinsed with water, air-dried, and then conditioned (from the drier side) at 70° F., 65% r.h. for a minimum of 24 hrs.

How Samples Were Exposed

Samples were exposed with occasional mild agitation under zero tension to the various chemicals. Each sample was exposed in a separate test tube sealed with a stopper. Immediately after the specified exposure, the samples were rinsed thoroughly with water and air-dried. They were then conditioned (from the drier side) at 70° F., 65% r.h. for 16 hrs.

Test Methods

Data on the breaking strength and breaking elongation of the scoured control samples and of the test samples after chemical exposure were obtained on an Instron tensile tester as follows:

Test specimen: single filament or single fiber
Conditions: 70° F., 65% r.h.

Sample gauge length:	10 ins. for continuous-filament samples; as long as practical for staple samples
Rate of elongation:	60% per min. for fibers having a breaking elongation of 10% or greater; 10% per min. for fibers having a breaking elongation of less than 10%

Data on toughness were calculated from work-to-break.

Data on the denier of single filaments or fibers of the scoured control samples were determined on a vibroscope at 70° F., 65% r.h.

Test Results

Average breaking tenacities in grams per initial denier of the fibers before exposure and after each of the listed exposures are compared in the charts on the following pages. Each tenacity value was obtained by dividing the average breaking strength, as determined in the Instron tensile tests, by the average denier of the scoured control fiber before exposure. Each tenacity value shown in the charts is based on the average breaking strength obtained from a minimum of 25 Instron determinations.

Additional data on the effect of exposure on color, breaking elongation, toughness, and length are available in Du Pont's *Technical Information Bulletin*, "Comparative Chemical Resistance of Fibers."

COMPARATIVE CHEMICA

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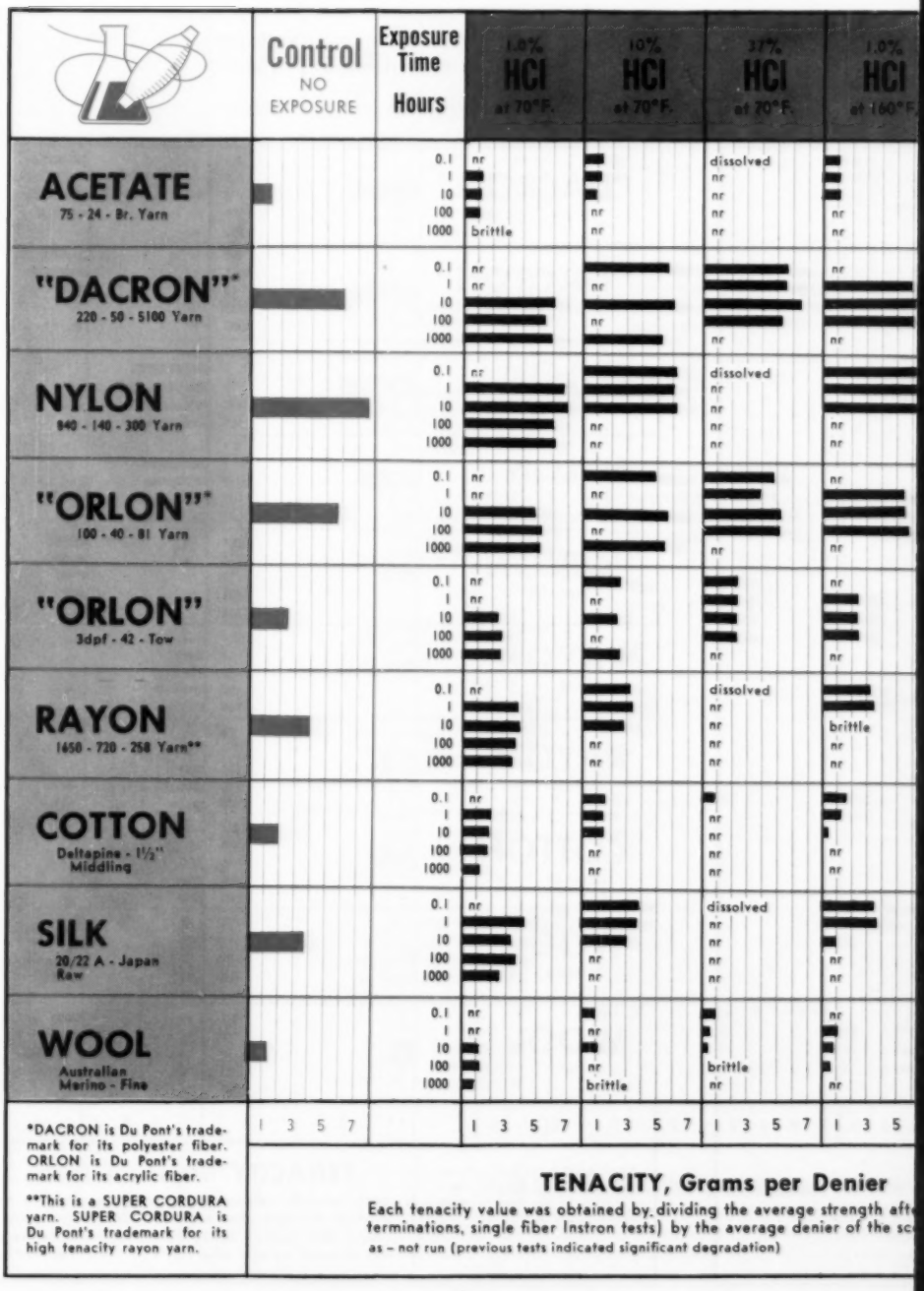
Exposures in Hydrochloric Acid

EFFECT ON TENACITY



*DACRON is Du Pont's trademark for its polyester fiber. ORLON is Du Pont's trademark for its acrylic fiber.

**This is a SUPER CORDURA yarn. SUPER CORDURA is Du Pont's trademark for its high tenacity rayon yarn.

TENACITY, Grams per Denier

Each tenacity value was obtained by dividing the average strength aft terminations, single fiber Instron tests) by the average denier of the sc as – not run (previous tests indicated significant degradation)

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COMPARATIVE CHEMICA

Cha

Exposures in

EFFECT ON

	Control NO EXPOSURE	Exposure Time Hours	1.0% H_2SO_4 at 70°F.	10% H_2SO_4 at 70°F.	70% H_2SO_4 at 70°F.	96% H_2SO_4 at 70°F.	H (u
ACETATE 75 - 24 - Br. Yarn		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	dissolved nr nr nr nr	as nr nr nr nr	dis nr nr
"DACRON"* 220 - 50 - 5100 Yarn		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	nr nr nr nr nr	dissolved nr nr nr nr	nr nr
NYLON 840 - 140 - 300 Yarn		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	dissolved nr nr nr nr	as nr nr nr nr	nr nr
"ORLON"* 100 - 40 - 81 Yarn		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	nr nr nr nr nr	dissolved nr nr nr nr	nr nr
"ORLON" 3dpf - 42 - Tow		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	nr nr nr nr nr	as nr nr nr nr	nr nr
RAYON 1650 - 720 - 258 Yarn**		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	dissolved nr nr nr nr	as nr nr nr nr	bri bri nr nr
COTTON Deltapine - 1-1/16" Middling		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	dissolved nr nr nr nr	as nr nr nr nr	bri bri nr nr
SILK 20/22A - Japan Raw		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	dissolved nr nr nr nr	as nr nr nr nr	bri bri nr nr
WOOL Australian Merino - Fine		0.1 1 10 100 1000	nr nr nr nr nr	nr nr nr nr nr	nr nr nr nr nr	nr nr nr nr nr	nr fus po po nr
	1 3 5 7		1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1

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TENACITY, Grams per Denier

Each tenacity value was obtained by dividing the average strength after exp terminations, single fiber Instron tests) by the average denier of the scoured

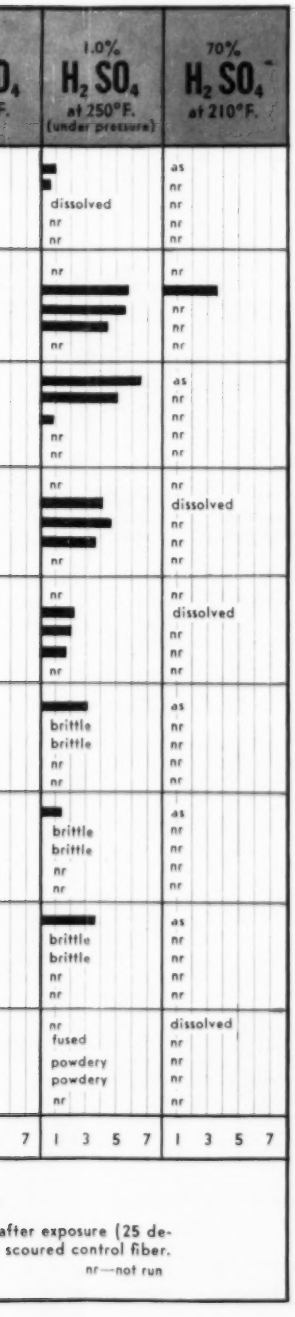
as – not run (previous tests indicated significant degradation)

CAL RESISTANCE OF FIBERS

Chart 1

es in Sulfuric Acid

T ON TENACITY


1.0% H_2SO_4 at 250°F. (under pressure)
70% H_2SO_4 at 210°F.
dissolved
nr
nr
nr

L RESISTANCE OF FIBERS

art 2

Exposures in Nitric Acid

EFFECT ON TENACITY

TENACITY, Grams per Denier

Each tenacity was obtained by dividing the average strength after exposure (25 determinations, single filament Instron tests) by the average denier of the scoured control fiber.

as – not run (previous tests indicated significant degradation)

nr – not run

er exposure (25 de-
oured control fiber.

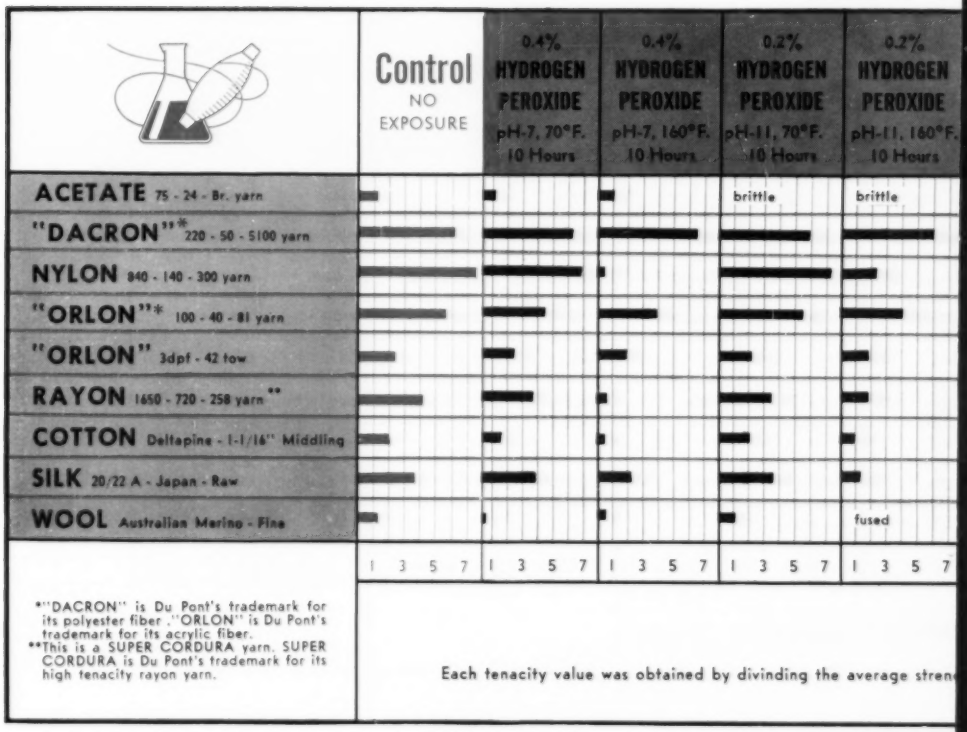
nr – not run

COMPARATIVE CHEMICA

Ch

Exposures in Bleaching

EFFECT O


Control
NO EXPOSURE
0.4% HYDROGEN PEROXIDE pH-7, 70°F. 10 Hours
0.4% HYDROGEN PEROXIDE pH-7, 160°F. 10 Hours
0.2% HYDROGEN PEROXIDE pH-11, 70°F. 10 Hours
0.2% HYDROGEN PEROXIDE pH-11, 160°F. 10 Hours
ACETATE 75 - 24 - Br. yarn
"DACRON"* 220 - 50 - 5100 yarn
NYLON 840 - 140 - 300 yarn
"ORLON"* 100 - 40 - 81 yarn
"ORLON" 3dpf - 42 tow
RAYON 1650 - 720 - 258 yarn**
COTTON Deltapine - 1-1/16" Middling
SILK 20/22 A - Japan - Raw
WOOL Australian Merino - Fine
brittle
brittle
fused
1 3 5 7

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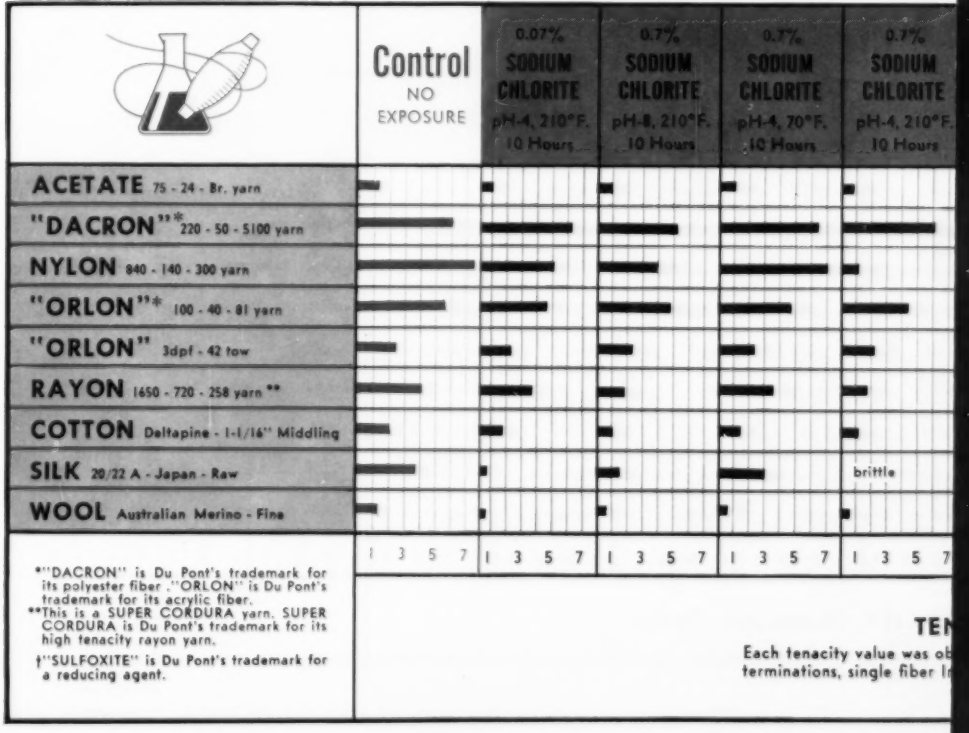
Each tenacity value was obtained by divinding the average stren


Control
NO EXPOSURE
0.07% SODIUM CHLORITE pH-4, 210°F. 10 Hours
0.7% SODIUM CHLORITE pH-8, 210°F. 10 Hours
0.7% SODIUM CHLORITE pH-4, 70°F. 10 Hours
0.7% SODIUM CHLORITE pH-4, 210°F. 10 Hours
ACETATE 75 - 24 - Br. yarn
"DACRON"* 220 - 50 - 5100 yarn
NYLON 840 - 140 - 300 yarn
"ORLON"* 100 - 40 - 81 yarn
"ORLON" 3dpf - 42 tow
RAYON 1650 - 720 - 258 yarn**
COTTON Deltapine - 1-1/16" Middling
SILK 20/22 A - Japan - Raw
WOOL Australian Merino - Fine
brittle
1 3 5 7

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†"SULFOXITE" is Du Pont's trademark for a reducing agent.

TEN

Each tenacity value was ob
terminations, single fiber I

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COMPARATIVE CHEMICAL

Chart
Exposures in
EFFECT ON T

	Control NO EXPOSURE	10% HYDROFLUORIC ACID at 70°F. 10 Hours	10% PHOSPHORIC ACID at 70°F. 10 Hours	5% FORMIC ACID at 210°F. 10 Hours	40% FORMIC ACID at 70°F. 10 Hours	FO A at 10
ACETATE 75 - 24 - Br. yarn					dissolved	dissol
"DACRON"* 220 - 50 - 5100 yarn						
NYLON 840 - 140 - 300 yarn						dissol
"ORLON"* 100 - 40 - 81 yarn						
"ORLON" 3dpf - 42 tow						
RAYON 1650 - 720 - 258 Yarn**						
COTTON Deltapine - 1-1/16" Middling						
SILK 20/22 A - Japan - Raw						
WOOL Australian Merino - Fine						
	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3

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TENA

Each tenacity value was obtained by dividing the average strength afte

Chart
Exposures in Sodiu

	Control NO EXPOSURE	1.0% NaOH at 70°F. 10 Hours	10% NaOH at 70°F. 10 Hours	40% NaOH at 70°F. 10 Hours	1.0% NaOH at 210°F. 1 Hour	N at 10
ACETATE 75 - 24 - Br. yarn			dissolved	dissolved		
"DACRON"* 220 - 50 - 5100 yarn						
NYLON 840 - 140 - 300 yarn						
"ORLON"* 100 - 40 - 81 yarn						
"ORLON" 3dpf - 42 tow						
RAYON 1650 - 720 - 258 Yarn**				fused		
COTTON Deltapine - 1-1/16" Middling						
SILK 20/22 A - Japan - Raw			brittle	brittle	dissolved	dissolv
WOOL Australian Merino - Fine			dissolved	dissolved	dissolved	dissolv
	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3

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TENA

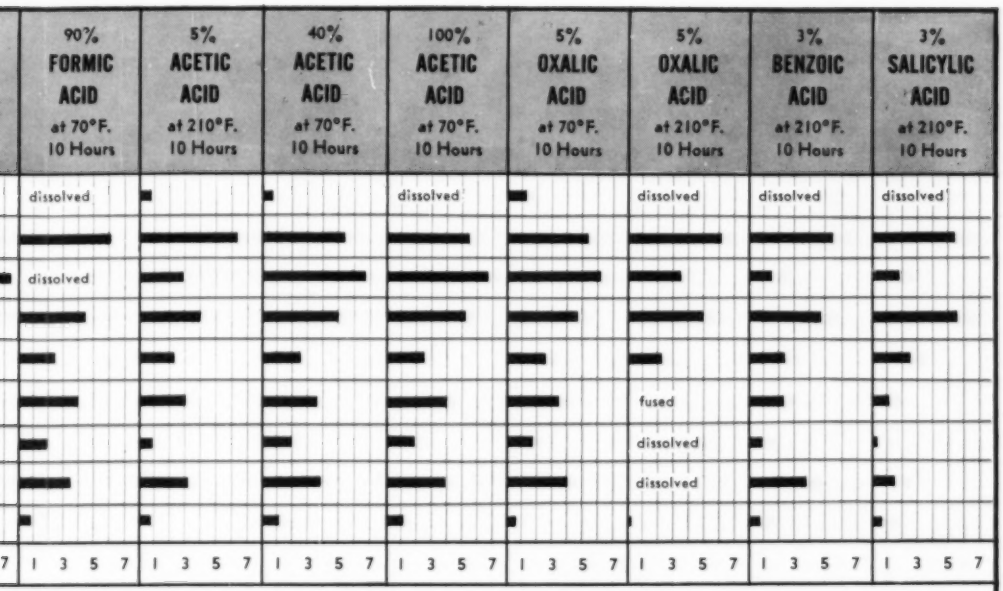
Each tenacity value was obtained by dividing the average strength after

AL RESISTANCE OF FIBERS

art 3

in Misc. Acids

ON TENACITY

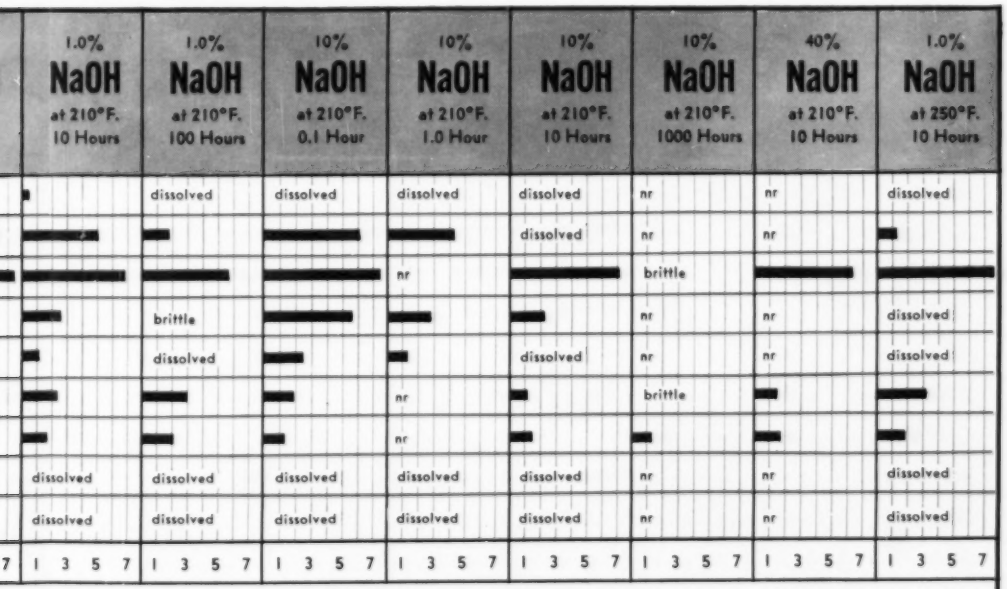


TENACITY, Grams per Denier

ngth after exposure (25 determinations, single fiber Instron tests) by the average denier of the scoured control fiber.

art 4

odium Hydroxide



TENACITY, Grams per Denier

ngth after exposure (25 determinations, single fiber Instron tests) by the average denier of the scoured control fiber.

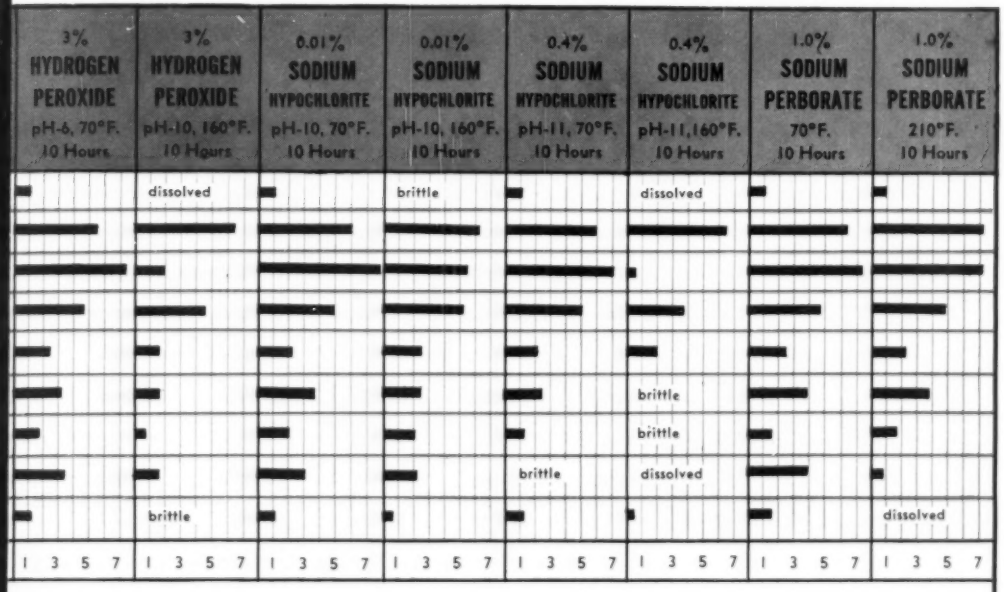
nr – not run

L RESISTANCE OF FIBERS

art 5

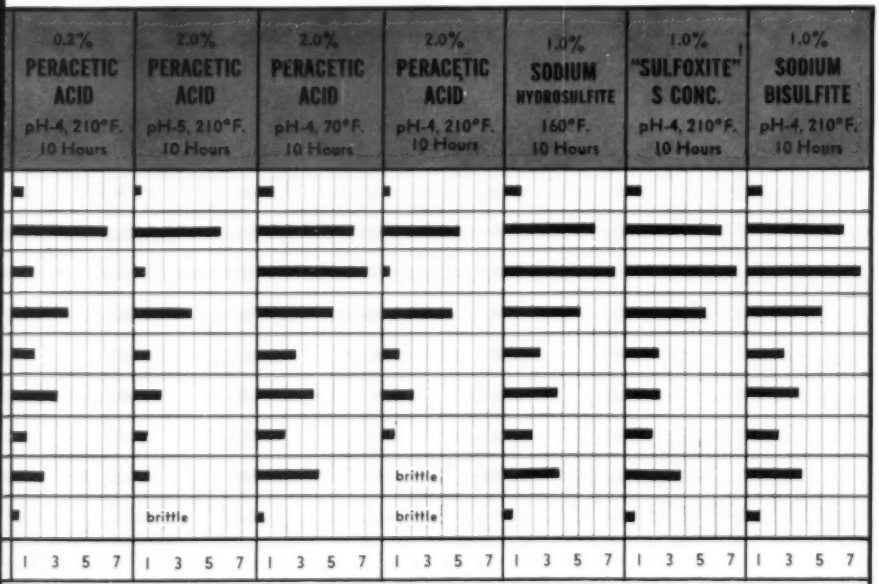
and Reducing Solutions

N TENACITY



TENACITY, Grams per Denier

gth after exposure (25 determinations, single fiber Instron tests) by the average denier of the scoured control fiber.


0.2% PERACETIC ACID pH-4, 210°F. 10 Hours
2.0% PERACETIC ACID pH-5, 210°F. 10 Hours
brittle
2.0% PERACETIC ACID pH-4, 70°F. 10 Hours
2.0% PERACETIC ACID pH-4, 210°F. 10 Hours
brittle
brittle
1.0% SODIUM HYDROSULFITE 160°F. 10 Hours
1.0% "SULFOXITE" S CONC. pH-4, 210°F. 10 Hours
1.0% SODIUM BISULFITE pH-4, 210°F. 10 Hours
1 3 5 7

NACITY, Grams per Denier

tained by dividing the average strength after exposure (25 de-
stron tests) by the average denier of the scoured control fiber.

COMPARATIVE CHEMICA

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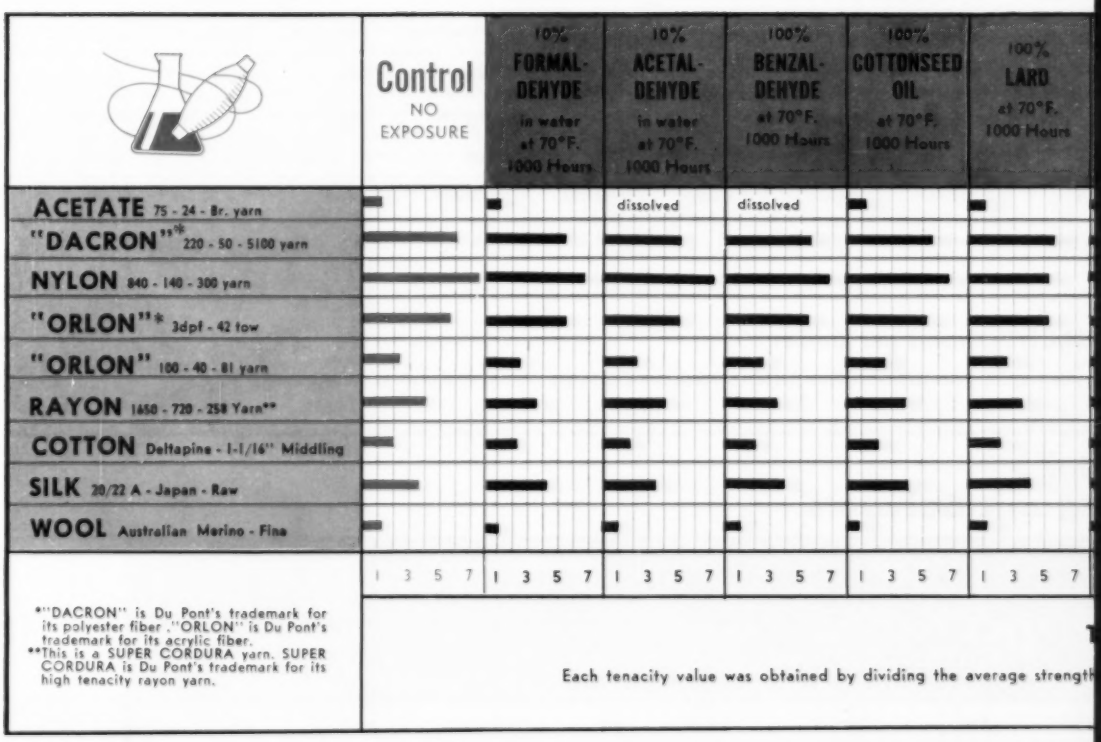
Exposures in Misce

EFFECT ON


Control
NO EXPOSURE
10% FORMALDEHYDE in water at 70°F. 1000 Hours
10% ACETALDEHYDE in water at 70°F. 1000 Hours
100% BENZALDEHYDE at 70°F. 1000 Hours
100% COTTONSEED OIL at 70°F. 1000 Hours
100% LARD at 70°F. 1000 Hours
ACETATE 75 - 24 - Br. yarn
"DACRON"* 220 - 50 - 5100 yarn
NYLON 840 - 140 - 300 yarn
"ORLON"* 3dpf - 42 tow
"ORLON" 100 - 40 - 81 yarn
RAYON 1650 - 720 - 258 Yarn**
COTTON Deltapine - 1-1/16" Middling
SILK 20/22 A - Japan - Raw
WOOL Australian Merino - Fine
dissolved
dissolved
1 3 5 7

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Each tenacity value was obtained by dividing the average strength

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COMPARATIVE CHEMICAL

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Exposures in Water, D

EFFECT ON

	Control NO EXPOSURE	WATER at 210°F. 10 Hours	WATER at 250°F. 10 Hours	1.0% SOAP at 210°F. 10 Hours	1.0% SOAP at 250°F. 10 Hours	1.0% "DUPONAL WA"† at 210°F. 10 Hours	" D
ACETATE 75 - 24 - Br. yarn							
"DACRON"* 220 - 50 - 5100 yarn							
NYLON 840 - 140 - 300 yarn							
"ORLON"* 100 - 40 - 81 yarn							
"ORLON" 3dpf - 42 tow							
RAYON 1650 - 720 - 258 Yarn**							
COTTON Deltapine - 1-1/16" Middling							
SILK 20/22 A - Japan - Raw							
WOOL Australian Merino - Fine					brittle		fu
	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1

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†"Duponal" is Du Pont's trademark for a flake surface active agent.

TEN

Each tenacity value was obtained by dividing the average strength

Chart

Exposures in Or

	Control NO EXPOSURE	100% ACETONE at 70°F. 1000 Hours	100% AMYL ALCOHOL at 70°F. 1000 Hours	100% BENZENE at 70°F. 1000 Hours	100% CARBON DISULFIDE at 70°F. 1000 Hours	100% CARBON TETRACHLORIDE at 70°F. 1000 Hours	CHL
ACETATE 75 - 24 - Br. yarn		dissolved					dis
"DACRON"* 220 - 50 - 5100 yarn							
NYLON 840 - 140 - 300 yarn							
"ORLON"* 100 - 40 - 81 yarn							
"ORLON" 3dpf - 42 tow							
RAYON 1650 - 720 - 258 Yarn**							
COTTON Deltapine - 1-1/16" Middling							
SILK 20/22 A - Japan - Raw							
WOOL Australian Merino - Fine							
	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1

*"DACRON" is Du Pont's trademark for its polyester fiber. "ORLON" is Du Pont's trademark for its acrylic fiber.

**This is a SUPER CORDURA yarn. SUPER CORDURA is Du Pont's trademark for its high tenacity rayon yarn.

TENACI

Each tenacity value was obtained by divinding the average strength after expo

AL RESISTANCE OF FIBERS

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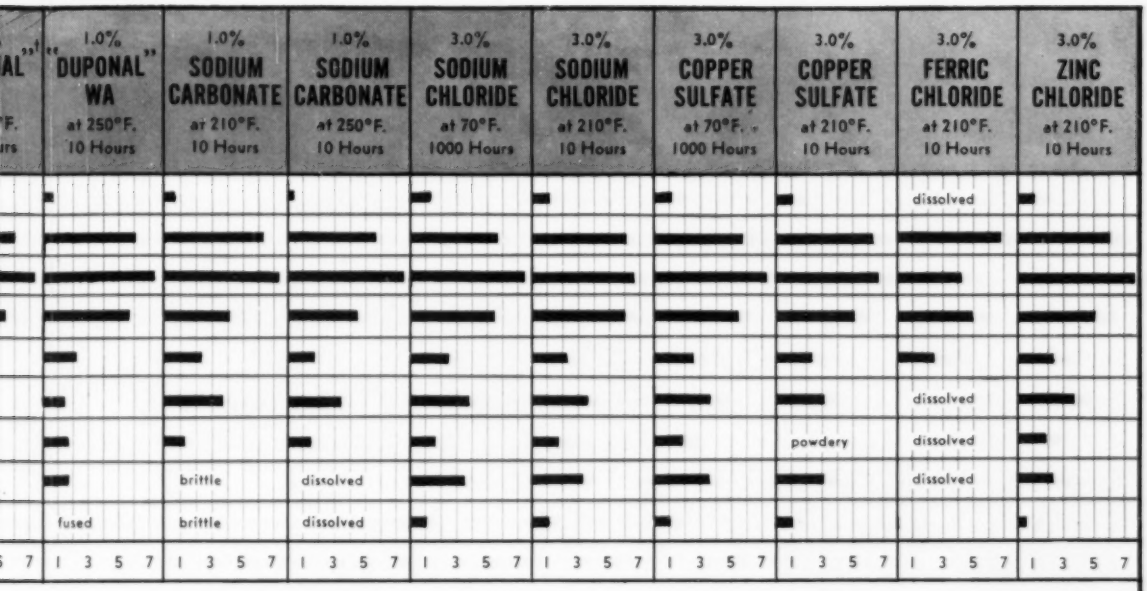
r, Detergents, and Salts

ON TENACITY

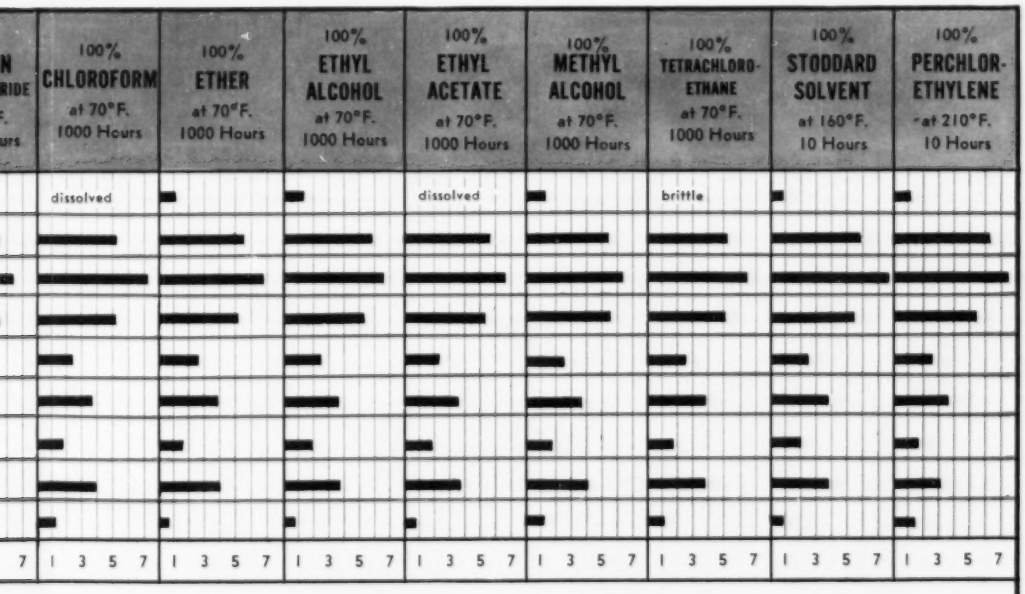


TENACITY, Grams per Denier

strength after exposure (25 determinations, single fiber Instron tests) by the average denier of the scoured control fiber.

hart 7

Organic Solvents


100% CHLOROFORM at 70°F. 1000 Hours
100% ETHER at 70°F. 1000 Hours
100% ETHYL ALCOHOL at 70°F. 1000 Hours
100% ETHYL ACETATE at 70°F. 1000 Hours
100% METHYL ALCOHOL at 70°F. 1000 Hours
100% TETRACHLORO-ETHANE at 70°F. 1000 Hours
100% STODDARD SOLVENT at 160°F. 10 Hours
100% PERCHLOR-ETHYLENE at 210°F. 10 Hours
dissolved
dissolved
brittle
1 3 5 7

ENACITY, Grams per Denier

after exposure (25 determinations, single fiber Instron tests) by the average denier of the scoured control fiber.

L RESISTANCE OF FIBERS

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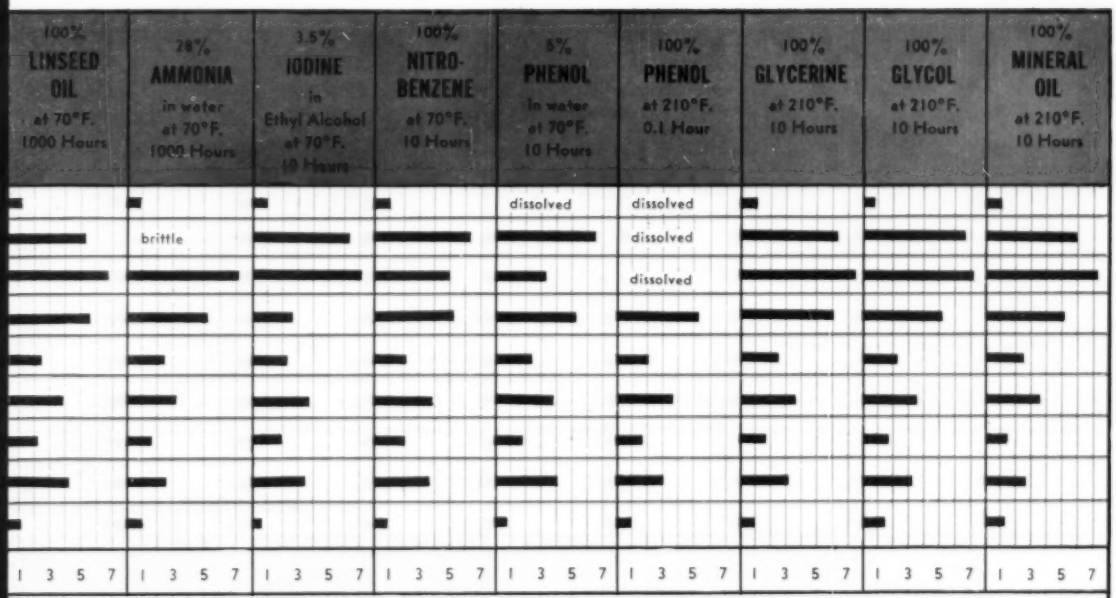
llaneous Chemicals

I TENACITY


100% LINSEED OIL at 70°F. 1000 Hours
28% AMMONIA in water at 70°F. 1000 Hours
3.5% IODINE in Ethyl Alcohol at 70°F. 10 Hours
100% NITRO-BENZENE at 70°F. 10 Hours
5% PHENOL in water at 70°F. 10 Hours
100% PHENOL at 210°F. 0.1 Hour
100% GLYCERINE at 210°F. 10 Hours
100% GLYCOL at 210°F. 10 Hours
100% MINERAL OIL at 210°F. 10 Hours
brittle
dissolved
dissolved
dissolved
dissolved
1 3 5 7

ENACITY, Grams per Denier

after exposure (25 determinations, single fiber Instron tests) by the average denier of the scoured control fiber.

How One Mill Stopped OILY YARN

• After losing one of its best customers because of oily yarn, a sales-yarn mill asked a research organization to find out why certain oil stains would not scour out of combed-cotton yarn. Here's the answer—and how the mill went about solving the problem.

By MAL BOWDEN

A SOUTHERN COMBED-YARN MILL recently lost a knitting-yarn account worth over $200,000 annually because of careless handling of oil in the spinning room.

The yarn was contaminated with oily stains that would not scour out by normal methods. The mill paid a research organization several hundred dollars to determine what was in the stains and what caused them.

The organization reported that the oil spots contained bits of metal and iron rust. The problem of removing the stains was tough. In fact, after finding out how to remove the contamination, extra processing of one lot alone cost over $800.

The mill could not afford to lose other good customers or to spend large sums to have contaminated yarn cleaned. The supervisory staff was instructed to study oiling and related problems and to adopt safeguards to prevent recurrence of oil stains.

The initial approach was to:

A. Show mill personnel what oil stains cost

B. Track down all possible ways and means whereby oily metallic or rust stains could get on the yarn, directly or indirectly

C. Draw up a series of pointers on maintenance and housekeeping designed to help fixers, section men, overhaulers, and operators control the problem

Pointers Are Drawn Up

A directive was then issued giving the following pointers:

1. No machine parts are to be placed or temporarily stored in the creel during repair jobs, gear changing, or overhauling.

2. Roll pickers will pick top rolls before they are oiled, not after they are oiled.

3. A special floor covering is provided for use during repair jobs on spinning-frame heads. Roller beams and ring rails will be covered during repair because gears, studs, and bearings are always contaminated with oil.

4. Oilers must use every precaution to keep oil off clearers when clearers are removed for top-roll oiling.

5. Frames must be thoroughly cleaned after repairs or overhauling jobs.

6. Oiling schedules and procedures are to be checked every day to assure adequate oiling and to prevent careless spattering of oil over the frame surfaces.

7. Special instructions will be given all operators regarding cap-bar nebs, which are a prime source of metal contamination and uneven yarn if improperly set up or maintained.

8. Spinners, roll pickers, and general workers will be trained to keep hands and aprons clean when they handle roving, yarn, or waste.

9. Plain metal parts (without chrome finish or other stainless characteristics) must be kept clean if they have contact with roving or yarn. Otherwise, rust will occur and get into the yarn.

While the pointers indicate some of the main causes of oil-and-metal stains, most of the trouble was coming from drafting assemblies, rolls, and frame heads. Poor housekeeping of these parts produced serious stains on the yarn. Here are some tips on the specific causes of oil-and-metal stains produced by these parts and how to prevent them:

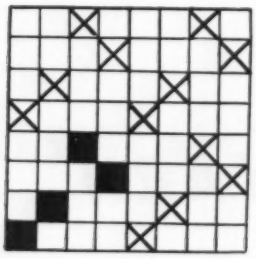
Specific Causes of Stains

When plain cap-bar nebs are used for spinning, every precaution should be taken to keep them lined up properly with the rolls and stands. Otherwise, these nebs will grind against the roller tips and produce metal dust that will contaminate the yarn. Worn nebs will cause uneven yarn and other defects; also, out-of-line top-roll tips grind out metal dust that combines with oil to produce oil-and-metal stains.

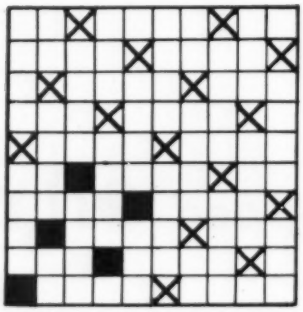
Although some mills prefer heavy and infrequent oiling for nebs and roll tips, frequent light oilings are better. Plain tips and nebs will not retain extra oil. The excess oil penetrates other areas and ultimately contaminates the yarn. If the oiling cycle is too infrequent, wear occurs that produces metal contaminants.

If roll pickers handle the rolls after they are oiled, some oil is bound to be spread throughout the drafting assemblies. Cleaners cannot remove fibers from freshly oiled tips without scattering oily, dirty "gunk." Often this gunk will be found on top clearers. If metal deposits are present, costly oil-and-metal contamination will occur in the yarn.

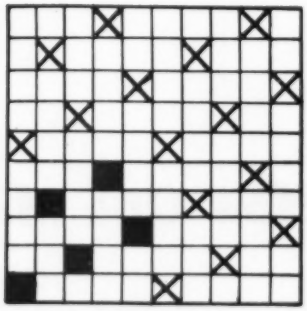
A series of posters illustrating the major causes of oil-and-metal stains was prepared and used to train supervisors and operators in methods of protecting yarn from dirty oil.



IMPROPER SATIN is a simple satin distribution. The design is shown at the bottom.



SATIN OF FIVE may be used where the number of feeds on the machine necessitate this arrangement.



Satin Stitches Improve
JERSEY PATTERNS

To prevent faulty dots appearing on the face of patterned jersey cloth:

- **Tie the floats in with the correct satin stitch**
- **Determine the start position with tracing paper**
- **Use stitching-in points as a part of the design**

By L. PRELOG, Sydney, Australia

WHERE COLORED DESIGNS are widely separated on circular jersey fabrics, the colored yarn floats at the back of the fabric. Long floats are objectionable in finishing and making up the garment, and the floats are usually tied to the fabric by lifting certain needles to the tucking height.

The points where the stitching takes place depend on the shape of the design. Unless the distribution of the stitching is planned, faulty dots may appear on the face of the fabric. These faults are more pronounced when worsted yarn is knitted.

A satisfactory stitching is possible if the stitching is arranged on a satin basis, because no two stitchings will be over one another. A vertical repetition of stitching in consecutive courses causes dots and disrupts the smoothness of the fabric face.

You can obtain a simple satin distribution with a minimum length of floats by using a Turkish satin, or an improper satin of four, for the stitching basis. A satin of five may be used where the number of feeds on the machine make this necessary. You can choose from two varieties of this satin of five.

An improper satin of six will give satisfactory results, but a satin of eight is the highest satin suitable. All higher satins present too-long floats between the stitching points or the last knitting needle and the stitching point.

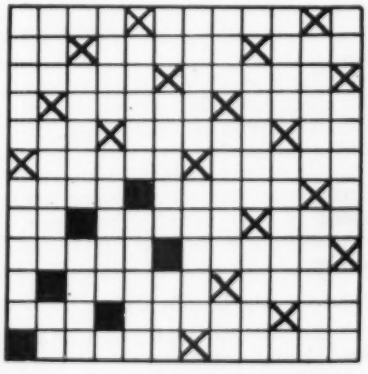
The distribution of the satin points in regard to the shape of the design is important. To prevent any possible formation of dots on the fabric face, the stitching must not take place directly above or below an angle formed by the design or diagonally opposed, above or below, to the angle of the design. The tuck stitches must not touch the stitches in the design.

These positions where stitching must not take place are indicated in the large design on the opposite page at *A*. Line *B* in the same figure indicates the position where disruption of the fabric face most occurs if the satin distribution is not used.

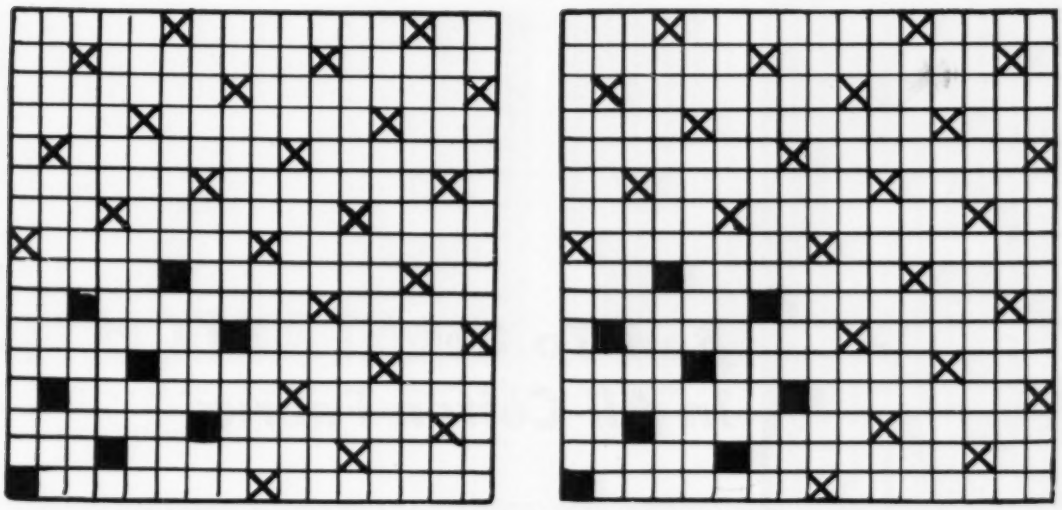
To determine a suitable satin and a suitable starting part of the satin, trace the various satins on transparent tracing paper and superimpose the paper over the fabric design. This tracing paper may be moved horizontally and vertically to achieve the best position. All prohibited points will then be noticed immediately.

Where patterns are produced with positive and negative pattern wheels, take care that each group of these wheels will select, for the tucking position, needles identical with the same satin points and read from the same line.

For example, if a Turkish-satin basis is chosen, the positive (No. 1) and



IMPROPER SATIN of six gives satisfactory results in tying in long unwanted floats.



SATIN OF EIGHT is the highest satin suitable. All higher satins present floats that are too long.

negative (No. 2) pattern-wheels will read:

One tuck, three empty, **one tuck, three empty,** etc.

Pattern wheels No. 3 and 4 will read:

One empty, one tuck, **three empty, one tuck,** etc.

Pattern wheels No. 5 and 6 will read:

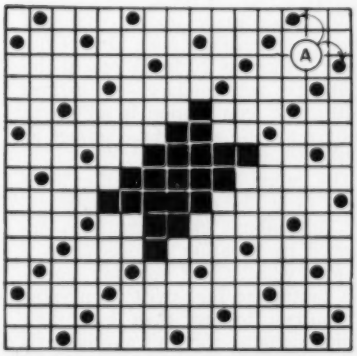
Three empty, one tuck, **three empty, one tuck,** etc.

Pattern wheels No. 7 and 8 will read:

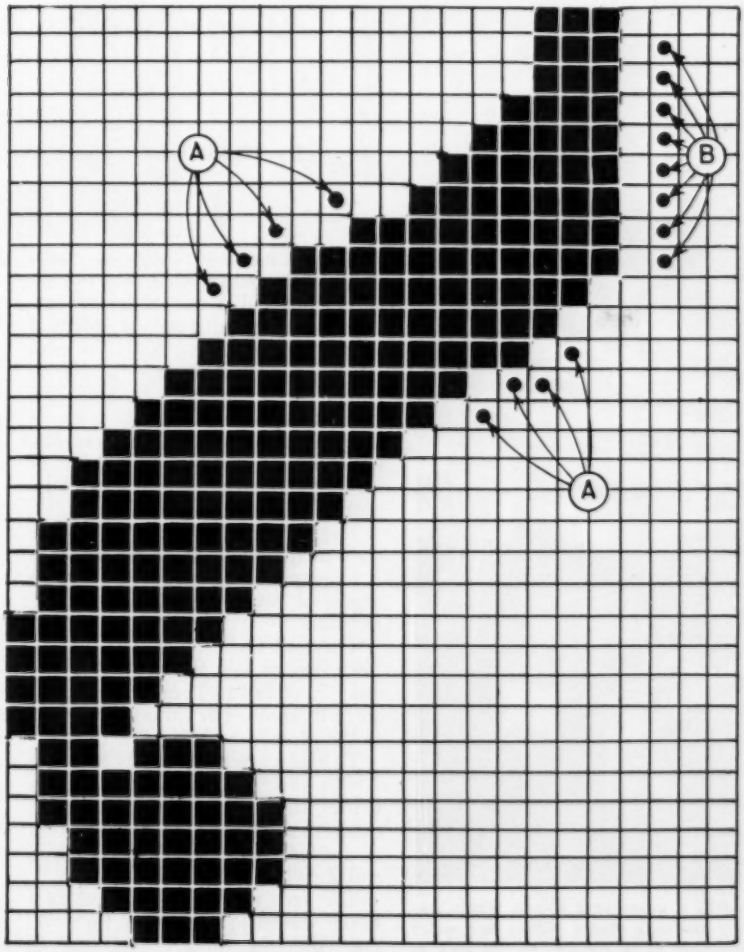
Two empty, one tuck, **three empty, one tuck,** etc.

The repeat is indicated in heavy type.

In certain designs produced by positive pattern wheels, a half-hidden design is sometimes desirable. This design is made by twill lines caused by the diagonal arrangement of the stitching. Such a design is indicated below. The design is continued diagonally by stitchings while the stitchings over the rest of the fabric are distributed on a five-ends satin basis.



HALF-HIDDEN DESIGNS are produced with stitchings running into the design to form a pattern continuation.



STITCHING POINTS must not touch design as shown at *A*. The line at *B* indicates the position where faults occur.

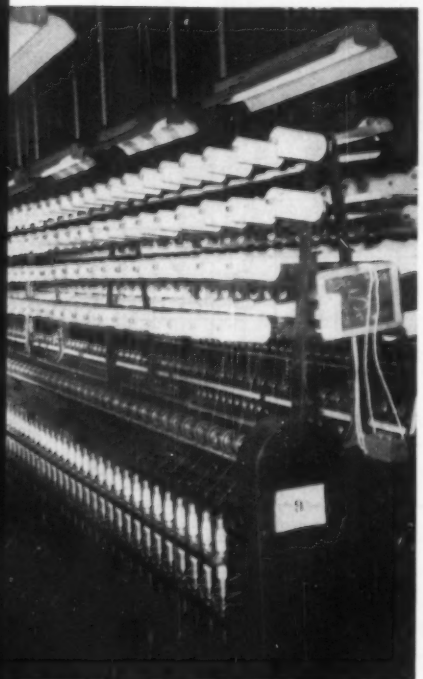
PLYING AND TWISTING 30s CP yarn is the first operation in making warp yarn for elastic cotton bandages. Fifty-two tpi. are put in the yarn. Both S- and Z-twist yarns are used in the warps.

How To Get STRETCH In All-Cotton Fabrics

You can get plenty of stretch in an all-cotton woven fabric by a careful balancing of yarn twist and finishing methods. Here's how Medical Fabrics Co., Paterson, N. J., makes a cotton bandage that—

- **Has 100% stretch**
- **Retains its elasticity over long periods of use.**

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD



FILLING is wound on a 66-unit Whitin-Schweiter automatic winder. Filling yarn, which varies from 8s to 30s 8½ tpi., is used as received from the manufacturer.

ELASTIC-BANDAGE FABRIC with 100% stretch built into the all-cotton material is one of several specialties being produced at Medical Fabrics Co., Paterson, N. J. To meet government specifications—the 100%-stretch factor is one of them—the plant has developed special ways of handling the yarns and fabrics. The bandages are useful in a number of medical applications where gentle support of tissues is needed.

The direction of stretch is in the warp of these fabrics; so the first step is to prepare warp yarns with a high degree of twist, in both S and Z directions.

The mill buys combed Peeler cotton yarns of low twist, in 30s, 40s, and 70s, of 1 5/32- to 1¼-in. staple wound on 1¼-lb. cones. The yarns are supplied to the plant in both S and Z twist.

To make a warp yarn, an S- and a Z-twist yarn are plied and put on a twister, where 52 tpi. are applied. The twisters run at 7,800 rpm. Production is divided evenly between 52-tpi. S and Z twist.

The yarn is set and is coned on a Foster winder in preparation for working. Alternate threads of S and Z twist are mounted on a specially built creel and are drawn off over-end to a Sipp-Eastwood warper to make up a section of the warp. Each section is then transferred to a loom beam.

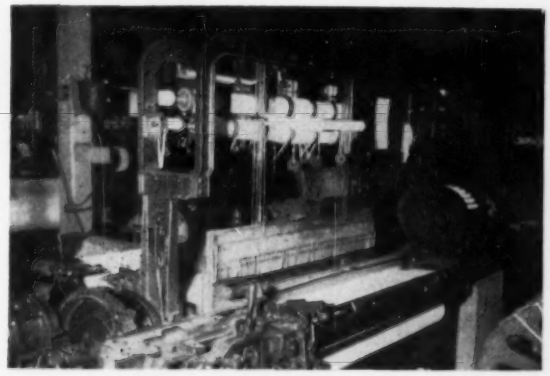
Low-Twist Filling Used

The filling for the elastic bandages varies in count; the predominant numbers are 8s, 16s, and 30s CP yarn with 8½ tpi.

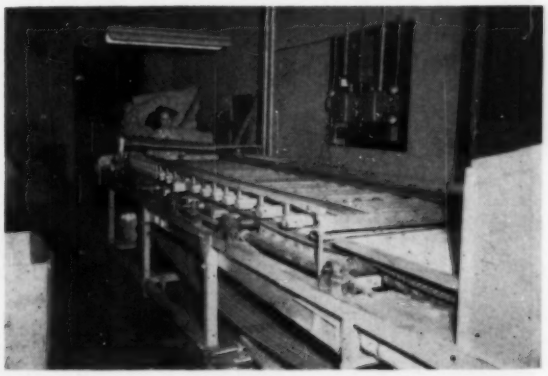
The plant uses 44 Draper Model E battery looms and 8 Crompton & Knowles looms equipped with leno motions to produce a false selvage at intervals across the piece.

Warps are made up to produce a fabric of 48 ends per inch. One of the staple fabrics has 20 to 21 ppi. at the loom. To get bandages of various widths, the leno motion is set up to produce a doup and a false selvage at widths required.

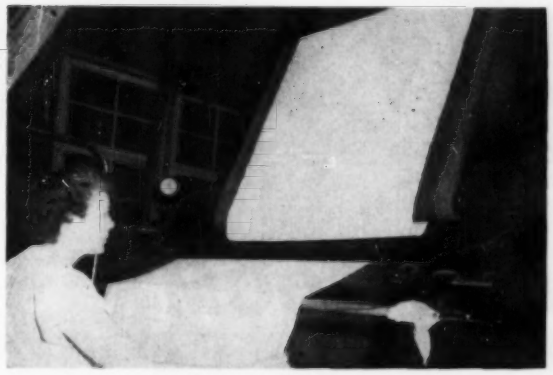
The fabric as it leaves the loom gives little indication of elasticity, but this inbuilt characteristic is developed by scouring the goods in a laundry wheel. The scouring operation causes the high-twist warp yarns to contract to less than half their original length, and this shrinkage is responsible for the elasticity of the finished product.



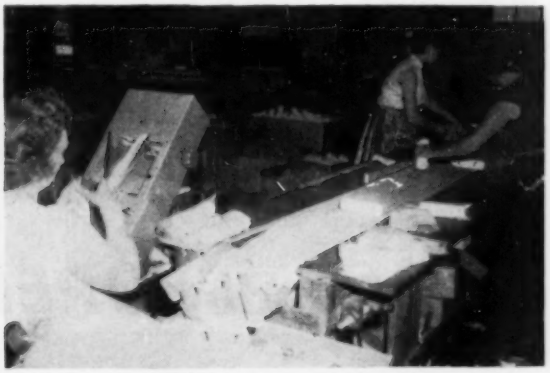
LOOMS are equipped with a leno motion and automatic bobbin changers. Leno motion makes a false selvage at the doup to prevent raveling of bandage edges in processing.



SLACK DRYING on a conveyor belt follows scouring and extracting. Infrared units provide the necessary heat. Fabric leaves the dryer slightly damp.



PALMERING removes the last traces of moisture and gives fabric a flat, smooth finish.



PACKAGING follows assembly-line methods on staple items. Rolled bandages are delivered to the conveyor, where clips are applied.

The actual scouring operation is simple but effective. A 500-lb. laundry wash wheel is loaded with 10 to 12 120-yd. cuts of cloth, plus 2 qts. of Rexopon E per 100 gals. of water. The temperature is run up to 180° F. for 15 mins.; then the bath is dropped. An overflowing rinse for 10 to 15 mins. at 120° F. completes the operation.

Maximum shrinkage is obtained in the wash-wheel by the tumbling action. Fabric woven at 20 to 21 picks will count 42 to 45 picks after washing.

From the time the fabrics leave the washer until final packaging, every care is taken to keep warpwise tension off the goods. To remove excess water after scouring, the goods are placed in a centrifugal extractor and run until most of the water has been thrown off. Then the pieces are stacked in front of a specially built conveyor-type dryer; and the operator feeds the cloth onto the conveyor, keeping all tension off the goods. Drying is done by a series of infrared heating elements mounted above the conveyor.

Palmer Finishes Goods

The cloth comes out of the dryer with just enough moisture left so that the Palmering operation that follows can produce a smooth and completely dry piece of fabric.

The pieces are fed by hand into a single-cylinder Palmer, with the goods again kept slack. When they leave the Palmer, they are dry and smooth and ready for further processing.

Because the finishing methods produce a fabric of slightly uneven width and machine-slitting might apply undue tension, Medical Fabrics finds that hand-slitting is the best method of separating the fabric into bandage strips.

The pieces are laid on tables, and the operators cut the doups, taking care to trim off excess filling. The strips are cut in lengths denoted by markers placed on the goods before finishing. Then the strips are turned over to an operator who puts them through a Merrow overedging machine that produces a neatly bound edge that won't ravel.

Several Packages Used

The bandages are prepared for sale to retail outlets, Civil Defense depots, and other government departments. They may be individually wrapped in cellophane or Pliofilm or banded with a paper label to be packed in dozen lots in sealed containers.

Assembly-line methods are used to roll and package the bandages. Girls roll the strips and place them on a conveyor that delivers them to other operators who attach a clip to the loose end of the bandage and may stick a printed band label to the bandage. At the end of the conveyor is a semiautomatic bagging machine that pops the bandages into a Pliofilm bag and seals it.

When quantities are small for special purposes, wrapping is entirely a hand operation.

WASTE HOPPER is first machine in line.

Ora's Standby OPENING ROOM

To be prepared for production changes, Ora Mills, Shelby, N. C., has built a standby cotton-opening room to use if production swings from spun synthetics to cotton. Highlights of the room are—

- **Ball-bearing feeder hoppers**
- **Double set of air filters**
- **Cotton on hand and laid down**

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

IF THE SPUN-SYNTHETICS MARKET softens too much for comfort, Ora Mills Co., Shelby, N. C., is prepared to shift at a moment's notice from the production of spun synthetics to combed or carded cotton yarns and fabrics.

This high degree of flexibility is possible because the operators know how to run both synthetics and cotton and because they have the equipment with which to do it.

Recently, the mill built a new cotton-opening room, which is kept standing at-the-ready. On hand is an ample supply of high-grade 1- to 1⅛-in. Eastern and Delta cotton; and at all times 27 bales are laid down ready for feeding when needed.

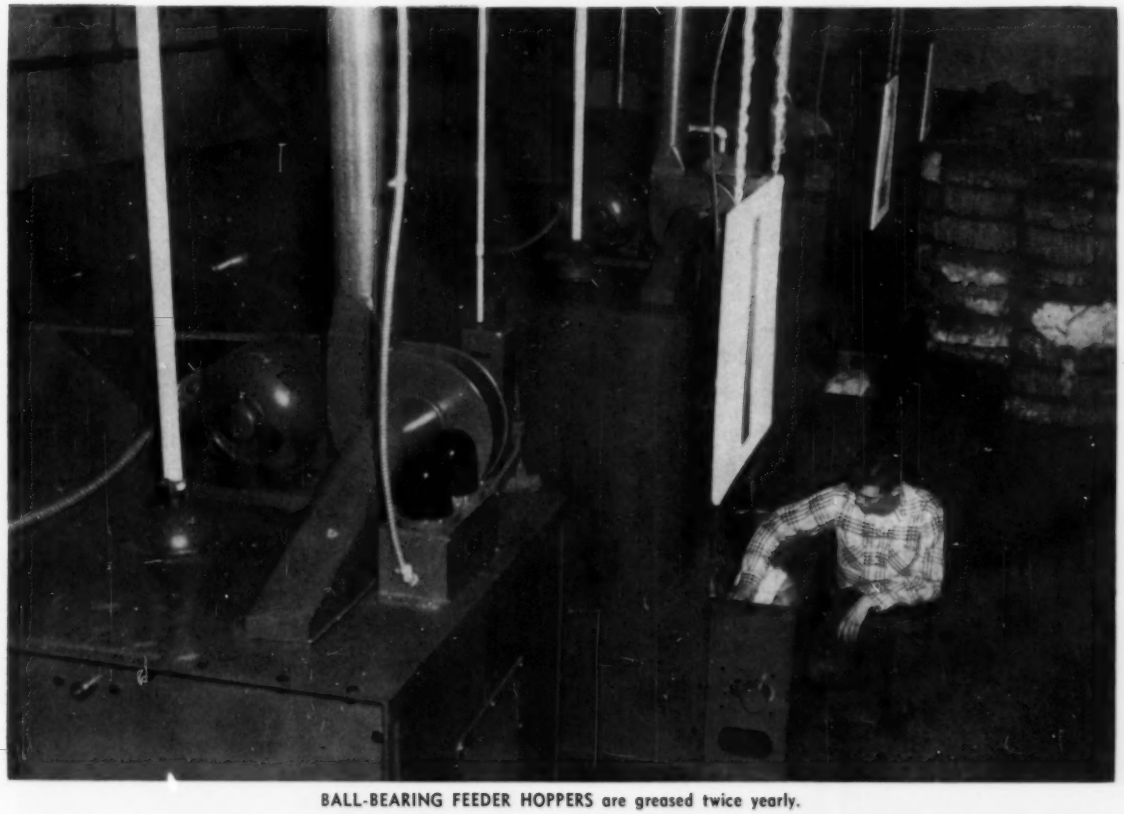
Opening-room equipment is largely Saco-Lowell. Arranged in a single line, the machinery consists of a Whitehead waste feeder, three Saco-Lowell No. 7 ball-bearing feeder hoppers, a conveyor table, a cleaner, a vertical opener, and a Centrif-Air cleaner. A two-bag No. 6 air filter cleans air from the feeder hoppers, and a similar four-bag filter is located between the cleaner and the vertical opener.

Double Set of Filters

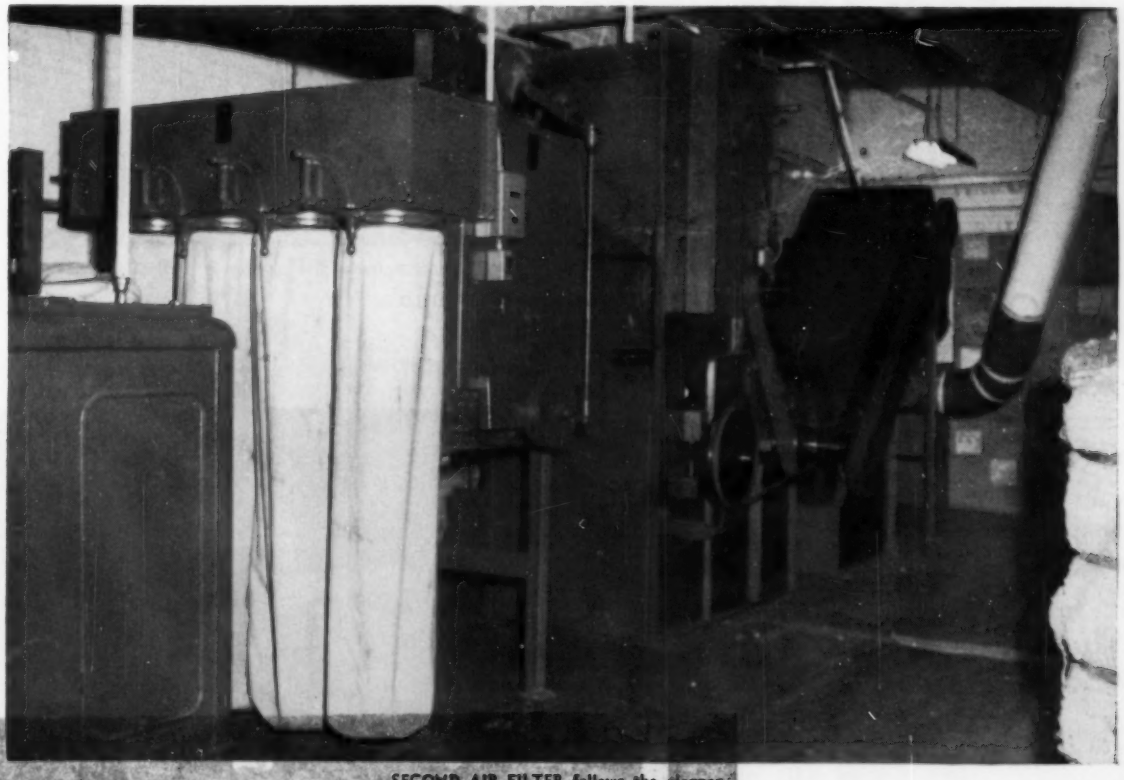
Because of the high-grade cotton used and the double set of air filters, this relatively short line of opening equipment produces extra-clean stock, which receives less than average beating.

The cotton is further cleaned in the picking section by two single process Saco-Lowell pickers with blending reserve. Each picker has two Kirschner beaters running 960 rpm.

In addition to the cotton-opening equipment, Ora has a number of combers ready for use when needed. All other machinery can be used interchangeably to produce either cotton or spun-synthetics yarns.

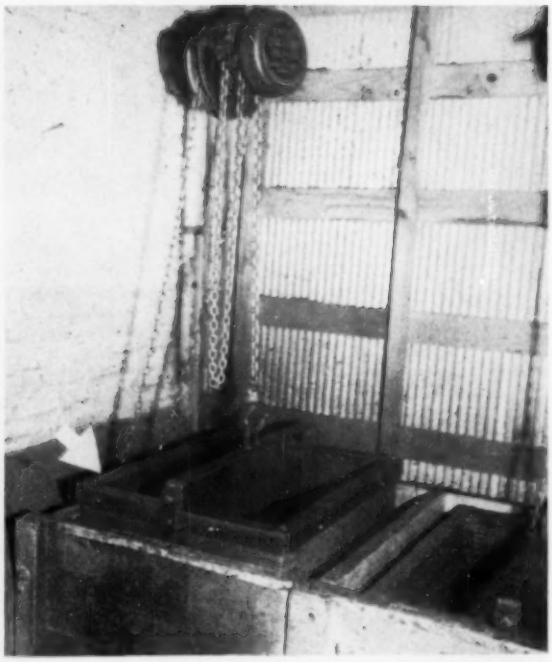


BALL-BEARING FEEDER HOPPERS are greased twice yearly.



SECOND AIR FILTER follows the cleaner.

PATTERN CHAINS and box chains are cleaned in the tank containing Oakite No. 22 agitated by live steam. The job is done quickly.



HAND HOIST is used to dunk several box chains and pattern chains at once in the basket (arrow) in a vat of ordinary loom oil.

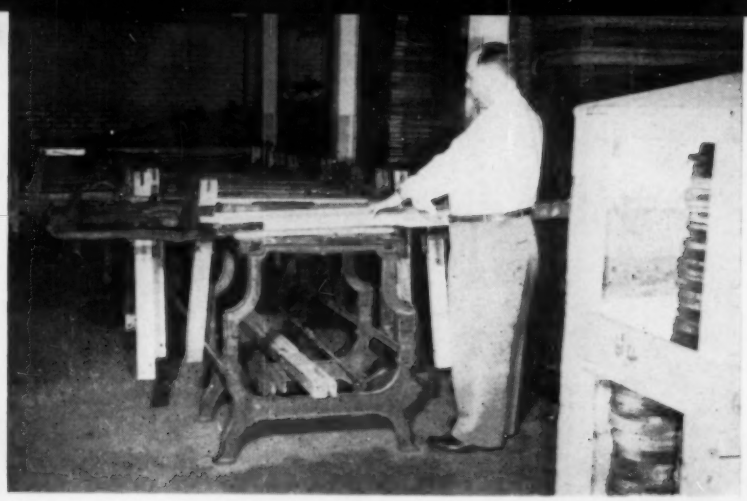
Put Your Loomfixers Back To FIXING LOOMS

Many jobs crop up for loomfixers during a day's work that aren't strictly loom-fixing. These jobs often come up when a loomfixer is busy. Here's what a large weaving mill has done to eliminate the jobs.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

TAKE-UP ROLLS are re-covered in a lathe set up to do only one job. Rolls for looms from 40 to 78 ins. wide are repaired.

OILED CHAINS, in the background, are left to drip free of excess oil.



LOOM LAYS, stored here, have been completely overhauled and aligned. There's at least one lay for every type of loom in the mill.

MAGAZINE is being completely rebuilt at the workbench. The shop operator has a special tool for each job, and he works fast.

THE RECENT ADDITION of Crompton & Knowles C-4 looms with Knowles heads to a 1,300-loom fancy-weaving mill brought up several maintenance problems. The most important problem is the care of pattern chains and box chains for the Knowles heads.

Since the care of chains is a constant job, a repair shop, called the chain room, has been set up.

"Now chain repairs that cost only a few cents in employee time have eliminated many breakdowns at the loom that often cost up to $50," says the superintendent of weaving in the North Carolina mill.

Pattern chains and box chains for dobby looms are also cleaned, repaired, oiled, and stored in the chain room.

Along with the chain repairs, other jobs formerly done by loomfixers are now being done by chain-room employees. For example, complete magazines are assembled. Now when a loomfixer has a broken major part on a magazine, he lifts out the entire magazine assembly and puts on a new one.

Loomfixers' Time Is Saved

Other jobs performed in the chain room are re-covering take-up rolls and rebuilding lays for the several types of looms in the weave room. Several finished take-up rolls and at least one lay for each type of loom are kept on hand.

Relieving loomfixers of much of this work has given them more time to fix looms. As a result, loomfixers now have time to follow up a strict loom-checking system; consequently, weave-room efficiency is improved.

All take-up change gears are cleaned in the shop and are stored in clearly marked orderly bins.

Harnesses, drop wires, and reeds are cleaned and repaired. Reeds are polished on a machine made by Carolina Loom Reed Co. The parts are carefully stored; and since the chain shop adjoins the drawing-in room, the harness parts are always available for instant use.

When warps are drawn, the box chains and pattern chains are attached to the truck and the warps are pushed to one of several weave rooms where they are to be used.

LABORATORY is at the side of the dye-mixing room and overlooks the dyehouse

Roanoke's New DYEHOUSE Solves Loose-Dye Problems

In the new knit-goods dyehouse of Roanoke Mills, Roanoke, Va., mixing dyestuffs and chemicals in a room above the dyehouse and delivering them through pipes to to the dyebecks has—

- **Reduced specks on the cloth**
- **Lessened chances of mistakes**
- **Eased reel men's work**

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

DARK-COLORED SPECKS on white and pastel-shade knit goods were always a problem at Roanoke Mills. The specks were usually traced to loose particles of dyestuffs in the dyehouse. When a new dyehouse was built to take care of additional production, plans were included to install a system that would eliminate this trouble.

All dye mixing is now done in two rooms overlooking the dyehouse. The mixed dye liquor then flows by gravity to the dyebecks sunk in pits specially constructed for easy drainage.

The dye-mixing rooms adjoin the laboratory that also serves as the dyer's headquarters. These rooms are built over the bulk stock room that also houses the Zeolite water-softener and brine-making equipment. The three sections take up the complete area along the east wall of the dyehouse.

Bulk chemicals and dyestuffs are raised to the mixing room on a cradle operated by an electric hoist. A conveyor rail in the mixing room makes it easy for the operator to move the drums or bags to different sections of the room.

One Man Mixes Dyes

One man on each shift mixes the dye liquor for all reels. He mixes the dyestuffs according to instructions made up by the dyer. Vat, sulfur, and naphthol dyes are used.

The dye order is made up from the production ticket, which gives information as to the color, size, weight, and style of fabric. Production lots are generally made to ±2% in weight to a certain figure to provide set formulas for dyeing.

The dyer chooses the dyeing machine for each batch according to the production required and the size of the reel. Certain reels are reserved for dark colors.

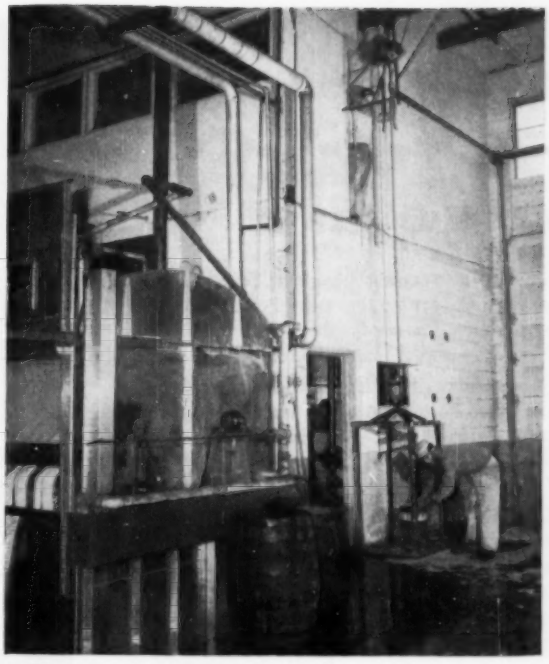
The dyeing-machine operator is provided with a copy of the dye order, and he works in close collaboration with the dye mixer. A two-way communication system links the dyeing machines with the mixing rooms.

The dyestuffs and chemicals are weighed out in the dry-mixing room, which is partitioned off from the wet-mixing section. The liquor is then mixed in one of the tanks according to the machine to which the dyestuff is to be delivered.

Tanks Overlook Dyehouse

The tanks are made from stainless steel, with the number of the dyebeck they supply painted on the fronts. The tanks are arranged alongside windows overlooking the dyeing machines.

Brine is pumped to each mixing tank from the floor below through a meter with a large scale to obtain accurate measurements of brine. All water is softened before it is pumped to the tanks.



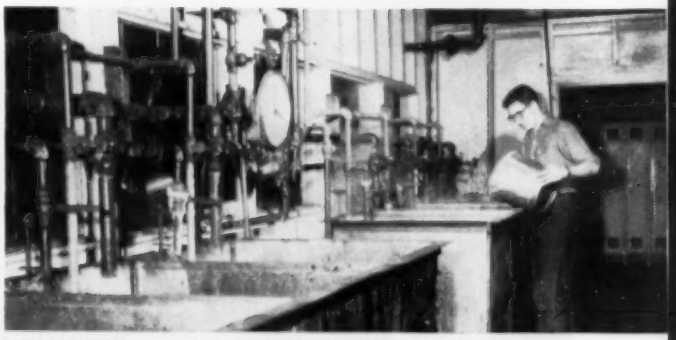
DYES AND CHEMICALS are lifted from the main floor to the mixing room on an electric hoist.

DYESTUFFS are mixed in a separate room. The dye mixer is in communication with the reel man.

Steam is circulated in the tank to mix hot liquors, and a portable mixing unit is used for cold mixes. The liquor is generally mixed just before it is needed at the dyebeck. Where the mixer's instructions show that certain lots may run out close together, several batches may be in the tanks at one time.

The reel man works with the dye mixer when a fresh dyeing is to be made. Valves at the dye-mixing tank and the machine are opened when dyestuff is required, and the liquor drains into the dyebeck.

The dyebecks are all stainless steel and are controlled by instruments. The dyeing cycle lasts from 1½ to 5 hrs., when a sample is checked by the dyer or assistant foreman. Standards are kept in the laboratory, and swatches from each lot processed are kept in the laboratory for reference.



DYE LIQUORS are mixed in these stainless-steel tanks. Brine and water are pumped from below.

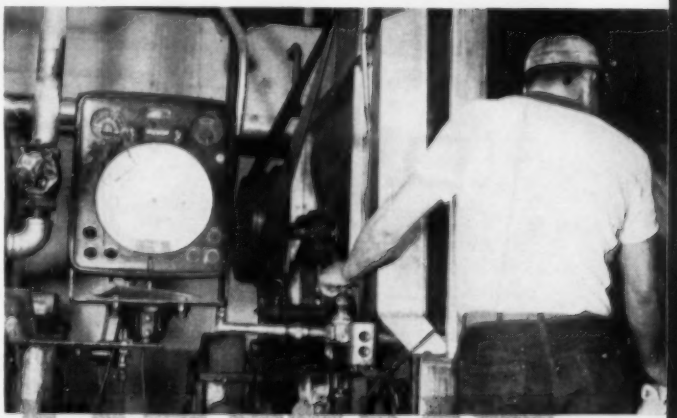
Steam Is Drawn Away

The ceiling of the new dyehouse is about 30 ft. high. A duct from each dyebeck leads to a central duct on the ceiling, where a large fan draws excess steam through the roof. The roof is made from molded concrete slabs and has plastic skylights. This setup, coupled with the steam-exhaust system, gives little trouble from condensation.

Two kiers are used to bleach whites and fabric for pastel shades. An extractor and a loop dryer complete the equipment in the dyehouse.

In addition to keeping dark specks off the light-colored fabric, the new system gives Roanoke other advantages. There is less chance of damage to the fabric through mistakes because one man is responsible for dye mixing on each shift.

Because fewer people handle dyes and chemicals, a better inventory of supplies is kept. The reel men's work is easier, they can be trained more quickly, and they can concentrate more on doing a better job of running the dyebecks.



VALVE at the dyebeck is opened to allow the mixed dyestuffs to flow to the dyebeck.

BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES.
For more information, write direct or use Reader Service post card

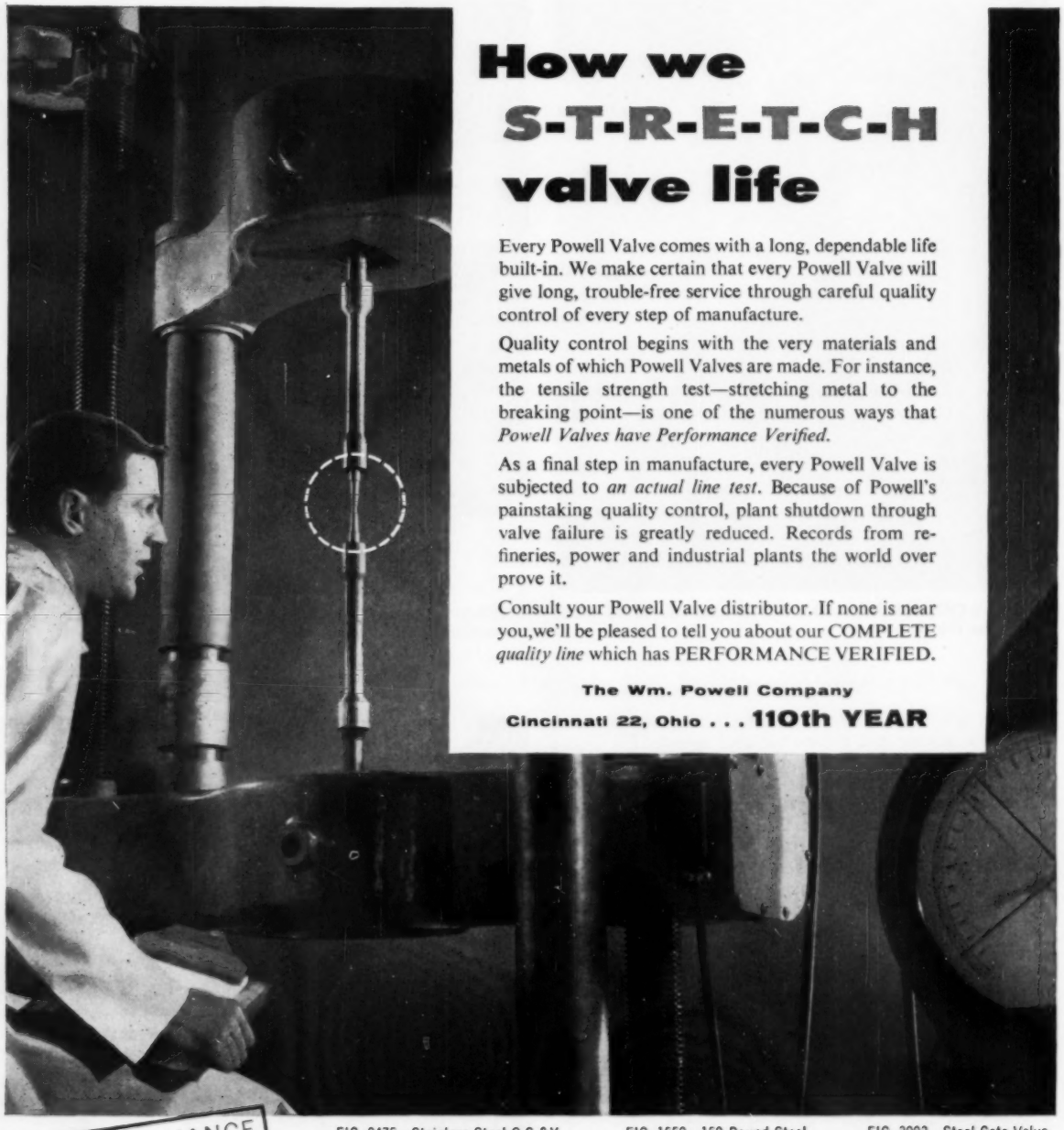


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FIG. 2475—Stainless Steel O.S.&Y. Globe Valve For 150 Pounds W.P.

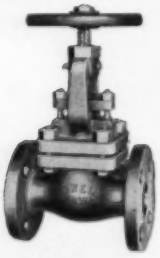


FIG. 1559—150-Pound Steel Lubricated Plug Valve. Sizes 1" to 4".

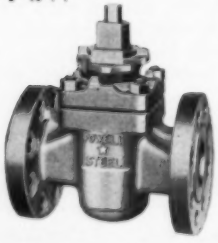
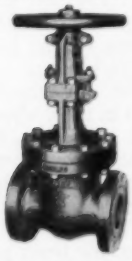


FIG. 3003—Steel Gate Valve For 300 Pounds W.S.P.



POWELL VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES.

19 Causes of CONE-WARPER Stops

• There is little need for a cone warper to stop except when the beam is doffed. Yet, there are many unnecessary interruptions of production caused by faulty spinning, winding, and warping practices. Here are some of the causes of ends down and how to correct the faults at their source.

By V. V. RAJWADE

WHEN an end breaks on a cone warper, the entire machine stops. Machine efficiency is lowered, cost of warping increases, yarn does not size well, and finished cloth has a defect.

Most of the causes of ends down on warpers can be traced to faulty spinning, winding, or the warping itself.

Spinning Faults

1. Soft yarn from the spinning frames is a major cause of warper stops. Causes of soft yarn include excessive soft waste in the mix, bad tapes, spindles running out, spindles requiring oil, and lint accumulating in the drafting zone. Soft places in the yarn frequently are stretched in the winding process and break at the warper.

2. Thick places, having a soft twist, also may be stretched on the winder if the slub catcher does not stop them. Thin places and cut or bruised yarn often cause warper stops.

3. Hard-twisted yarns may form kinks by twisting on itself while being wound, and a break from this cause usually entangles other ends. Hard-twisted yarn may be caused in spinning by use of the wrong traveler, roving singles, or accumulation of lint in the drafting zone.

4. Foreign matter, such as human hair, jute fibers from bale coverings, and broom and brush fibers can get into the mix and cause breaks to occur at the front of the warper between the back reed and the drop pins.

Winding Faults

5. Tangled yarn in the winder package lowers warper efficiency. To prevent tangled yarn, the winder operator should turn the cone by hand to take up the slack before the machine is started. Kinks are formed when an extra end gets into the reel and when layers of soft-wound yarn catch and pull off other layers of yarn.

6. Defective winder spindles make netty cones. Spindles should be checked and repaired if necessary every few days.

7. Knots tied improperly by the blade knotter tend to come loose at the creel. When knots untie, peculiar curls form on the severed end. Big knots tied by hand resist unwinding, and the yarn often breaks.

8. Many cones are damaged by rough handling. A thick rubber sheet placed beneath the creel will prevent damage when cones are dropped.

9. Cleaning spindles while the machine is running permits waste to go along with the yarn. A hard mass is eventually formed that causes a break at the creel.

10. When the stop motion is activated on the winder, cones continue to turn because of momentum. If the operator does not remove the layers of slack yarn, the yarn will come off in a bunch on the warper.

11. Wooden cones with cuts or bad noses tend to snag the yarn and cause breaks as it unwinds.

12. When a cone in the warper creel is exhausted, the adjacent cone should immediately start delivering yarn. The starting and finishing ends must be tied properly, not simply twisted. Many winder operators do not understand the importance of keeping the starting end of the yarn at the base of the cone. A good method is to put one turn of yarn around the base spindle, press the cone on the spindle, put a few coils on the base, and start winding.

13. Soft cone noses are caused by improper setting of the spindle holder, tension, and guides. Gauging must be accurate.

Warping Faults

14. Improper alignment of the porcelain guides on the warper causes yarn to rub against itself until a break occurs.

15. Lint accumulating on the spare cones prevents proper change-overs. The fans keep this fluff stirred up. The creel must be kept clean.

16. Tension on magazine creels should be regulated to preserve the elasticity of the yarn. Heavy washers on the guides should not be used.

17. The brake on the measuring and guide rolls should be carefully adjusted to prevent straining the yarn when the warper stops.

18. The front half-reed must be adjusted to prevent the outside ends from rubbing against the beam flange, or breaks will result.

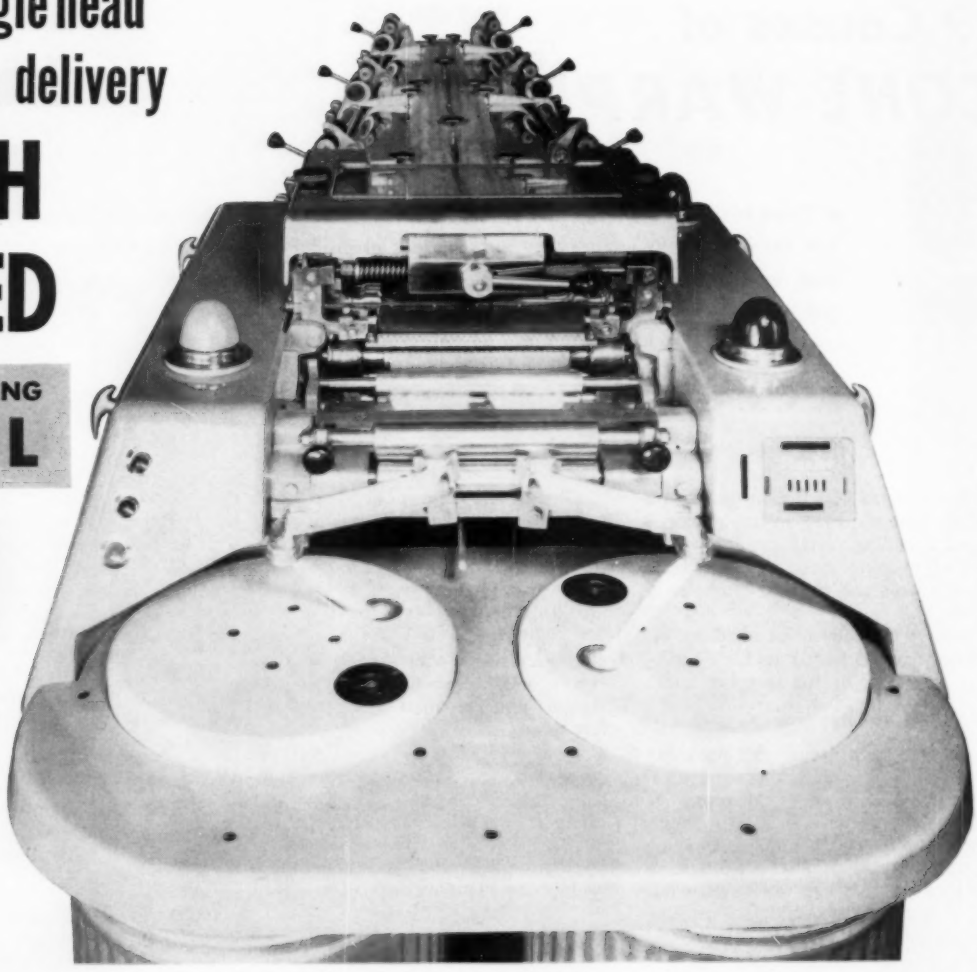
19. Relative humidity should be lower than in the weave room; 55 to 60% is recommended. If the humidity is too high, false strength will be added to the yarn on the warper. Excessive humidity increases resistance to unwinding and causes hardness of the beam. Breaks may result because of the greater tension required to pull the yarn off the cones.

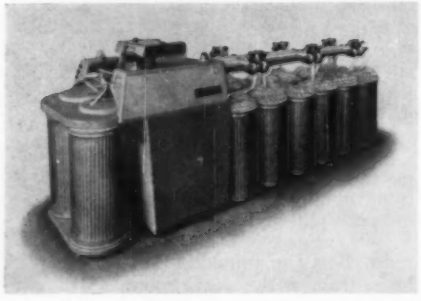
New single head multiple delivery

HIGH SPEED

INTERSECTING GILL

MODEL IR





This new INTERSECTING GILL BOX has been designed by SACM to produce quality sliver for the abbreviated systems of spinning. DELIVERY into one, two or three cans, or bi-coil into two cans, with either ball or can creels, allows versatile arrangement of machines for balanced production.

✓ NEW WEIGHTING SYSTEM with patented single-spring action is efficient and simple. THE HEAD is engineered for high operating speeds, with patented triple-thread screws and special fallers for increased strength, trouble-free operation and lower maintenance.

STOP MOTIONS with different indicating lights give immediate action when a sliver is missing at either the feed or delivery end, in case of lapping in the drafting units or in the coilers, and if a faller pin comes in contact with the plate protecting the top roller.

✓ CHANGING OF GEARS IS ELIMINATED for draft adjustments: a gear box gives immediate and accurate changes of draft by merely setting two levers. NEAT ENCLOSURE with flush mounting of control buttons and yardage stop motion keeps machines clean.

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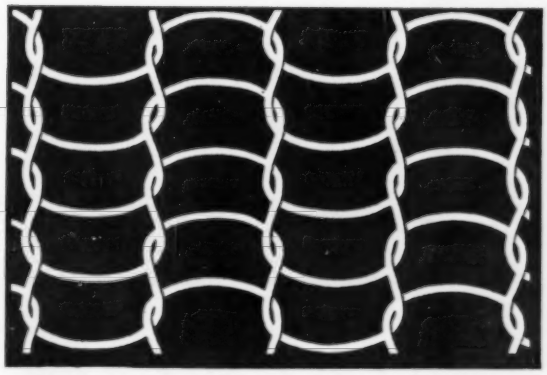
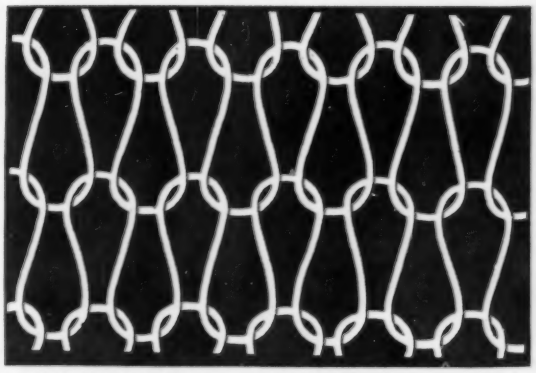


MANY COURSES with few wales gives poor elasticity in width.



FEW COURSES with many wales is very elastic in width.

How Stitch Length and Gauge Affect HOSIERY Elasticity

• Elasticity of stockings not made from stretch yarns improves as the courses per inch are decreased and the wales increased. Fine-gauge stockings are more elastic than coarse-gauge stockings. Thread tension does not affect elasticity.

ELASTICITY of conventional hosiery (not made from stretch yarns) varies from 70 to 220%. An instrument that determines the extended flat width of a stocking was used to show that best elasticity is obtained from fabrics made on a fine-gauge machine with long stitches.

The widthwise elasticity is chiefly affected by the construction of the stocking. When stitches are knitted tight, a small amount of yarn goes into the width and elasticity is poor. Measurements of elasticity were recorded in the welt, thigh, calf, ankle, and foot; and wide variations were found in these points even in the same stocking. The elasticity diminishes in inverse ratio to an increase in courses per inch.

Tests were made with the same yarn on 54, 60, and 66-gauge machines. Stockings were knitted with a tight stitch, a normal stitch, and a loose stitch. Statisical analysis showed that the 54-gauge stockings were the least elastic, the 66-gauge stockings were most elastic, and the 60-gauge stockings took an intermediate position.

Fewer Courses, More Elasticity

In all gauges, the stockings with fewer courses per inch showed better elasticity than stockings with a normal or high number of courses per inch. The welts, which were made from 40-den. yarn, also showed the same characteristics.

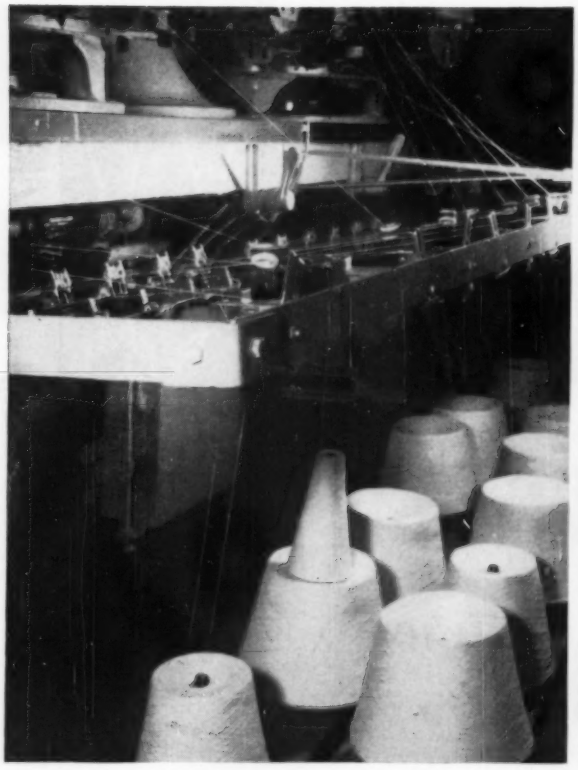
The effect of thread tension during knitting on elasticity was made on 54- and 60-gauge machines. A 15-den. yarn was knitted on the 60-gauge machines, and 30-den. yarn was knitted on the 54-gauge machines. Stockings were knitted with varying degrees of tension.

Some stockings were knitted with practically no tension. Others were knitted with as much tension as possible. The results showed that tension on the yarn did not influence the elasticity to any marked degree.

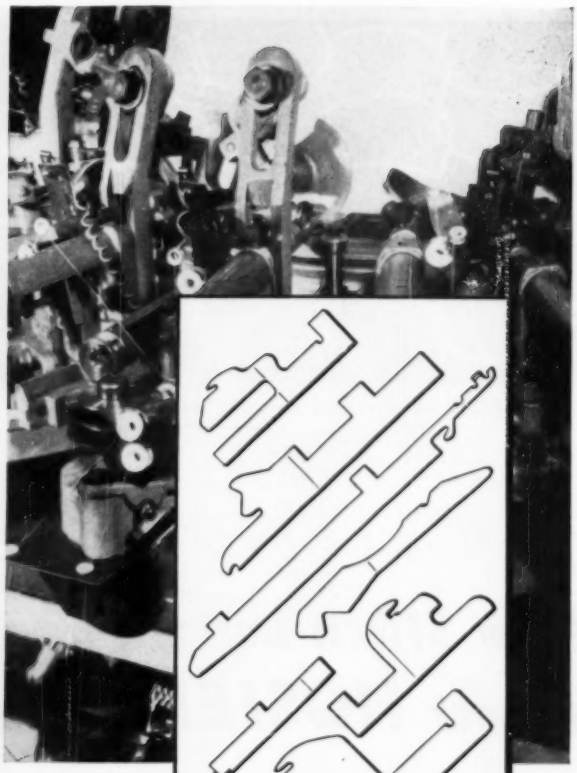
Evidence shows that the elasticity of stockings improves as the number of courses become fewer and the wales greater.

If stockings are not elastic enough, the simplest remedy is to reduce the number of courses per inch. However, too loose a knit causes excessive pull threads; so a better means to improve elasticity is to knit stockings on a finer-gauge machine.

From International Rayon Trading Co.'s house organ Rayon Review. Article by E. Huekers and A. Bakker.



YARN BALLOON is kept large, but yarn is kept off the floor by a low rack under the stop-motion brackets. The yarn path is about 8 ft. long.



FURNISHING WHEE… …heels are opened until the … in.

How Griffin Knits FLEECE WITHOUT FAULTS

▶ **Electric stop motions, furnishing wheels, … spring-needle knitting machines improve q… breakage**

By **JAMES H. BLORE,** Assistant Editor, TEXT…

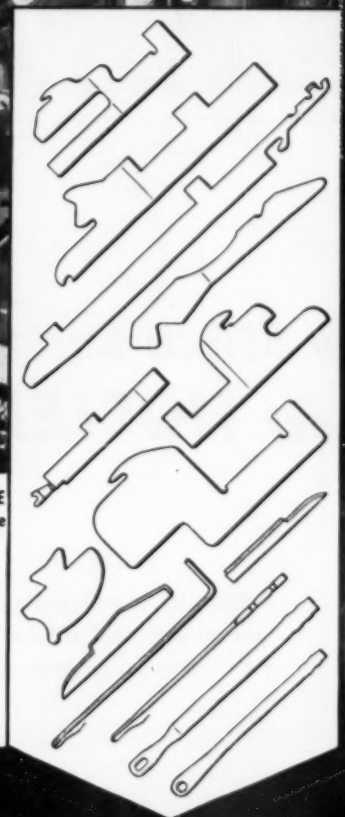
CHECKING ON FABRIC QUALITY recently, Griffin Knitting Mills, Inc., Griffin, Ga., discovered that 56 doz. heavyweight fleece garments were laid up without a fault in the cloth. A check on needle breakage showed that two needles were broken in one week on the seven new Tompkins D-2 machines that knit the fleece fabric.

The mill knits double-plush fleece from … and … rotate… chines … head is equip…

Low Rack Keeps Balloon Large

Press-offs are rare at Griffin because good yarns are used and the yarn path from the cone to the furnishing wheels … …nes and to the furnishing wheels.

The porcelains are adjusted so that the yarn rubs on no rough surfaces. The stop-motion tension adjustments



Ives Helped!

Here's a story so interesting Textile World made it an editorial report. The use of IVES precision made needles, specially hardened and tempered from more durable vanadium steel, helped make this editorial possible. Your machines will produce better fabric too at lower cost when equipped with IVES needles and parts for circular and tricot knitting machines. Let IVES help YOU increase profits. Write or wire.

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NEW BRUNSWICK, N. J.

Spinning-Frame SCOURING Is Put Under Time Control

A system of unit-time controls eliminated unnecessary downtime during spinning-frame scouring. The system features—

- **Specific jobs for each scourer**
- **Seven job groups with scheduled times**
- **Two frames completely scoured, aligned, and leveled daily**

By MARCUS C. GROSS

USING UNIT-TIME CONTROLS, a large Eastern mill eliminated unnecessary production loss caused by spinning-frame downtime during scouring. The mill used to scour on the first shift only; if a frame was only half scoured at the end of the shift, it remained idle on the second and third shifts.

Although there is a certain amount of necessary downtime during scouring, the mill realized that only careful planning, scheduling, and supervision could cut the time to a minimum. There was no extensive time-study, but the supervisor and the head scourer carefully surveyed the individual and group tasks and worked out a unit-time control system. The unit times set up were made flexible enough to account for preparation of equipment and occasional rest periods.

The mill used to scour each frame annually, with three scourers and a head scourer working on one shift. Now six scourers and a head scourer, working on two full shifts and partially on the third shift, scour each frame twice a year.

Each scourer is assigned specific jobs on each frame. Two frames are scoured and aligned and leveled in one day. Under unusual conditions, the scourers can get help from the section hands and spindle plumbers.

Here's the Schedule

The schedule is divided into seven groups of jobs, each with an approximate scheduled time. The job groups, which run in order, take 4 hrs. to complete on a frame. As shown by the following schedule, it takes 4 hrs.—from 6 a.m. to 10 a.m.—to scour one frame. At this mill, the crew takes half an hour's rest from 10 a.m. until 10:30. Then it starts on the second frame. For this frame, the unit-time schedule runs from 10:30 a.m. to 2:30 p.m.

The assignments are broken down as follows:

Group A
Time—6:00 to 6:30 a.m.
Personnel—Six scourers
Duties—Take off front and back top clearers. Pick clearers. Strip gearing preparatory to removing bottom rolls.

Group B
Time—6:30 to 7:00 a.m.
Personnel—Six scourers
Duties—Strip roll assembly of all parts to be cleaned. Release weights first. Place levers on middle creel. Put all cradles with top aprons in box on truck; also include saddles, stirrups, and knurled top middle rolls. Place back and front top rolls in separate boxes. Do not mix rolls. Take off back under clearers.

Group C
Time—7:00 to 7:30 a.m.
Personnel—Four scourers
Duties—Blow down frame with air hose. Wash saddles and stirrups. Pick and clean bottom clearers.

Group D
Time—7:00 to 8:00 a.m.
Personnel—Two scourers
Duties—Blow saddles, cradles with top aprons, stirrups, and knurled top middle rolls.

Group E
Time—7:30 to 8:00 a.m.
Personnel—Four scourers
Duties—Clean front and back top rolls. Bring bad rolls to attention of head scourer. Clean levers, back bars, cap bars, and all other nonremovable parts.

Group F
Time—8:00 to 9:00 a.m.
Personnel—Four scourers
Duties—Scour rolls.
Personnel—Two scourers
Duties—Scrape bearing surfaces of roll stands. Remove all oil, grit, and residue. Replace middle and back rolls. Clean and check bottom aprons.
Personnel—Head scourer and six scourers
Duties—Align and level head and foot ends.

Group G
Time—9:00 to 10:00 a.m.
Personnel—Six scourers
Duties—Replace top rolls, cradles, top aprons, saddles, stirrups, and levers. Replace weights. Gauge levers by adjusting Speakman screw if necessary. Piece up ends. Oil all oil cups and oil lines.
Personnel—Head scourer
Duties—Oil all oil cups and lines.

Modernize

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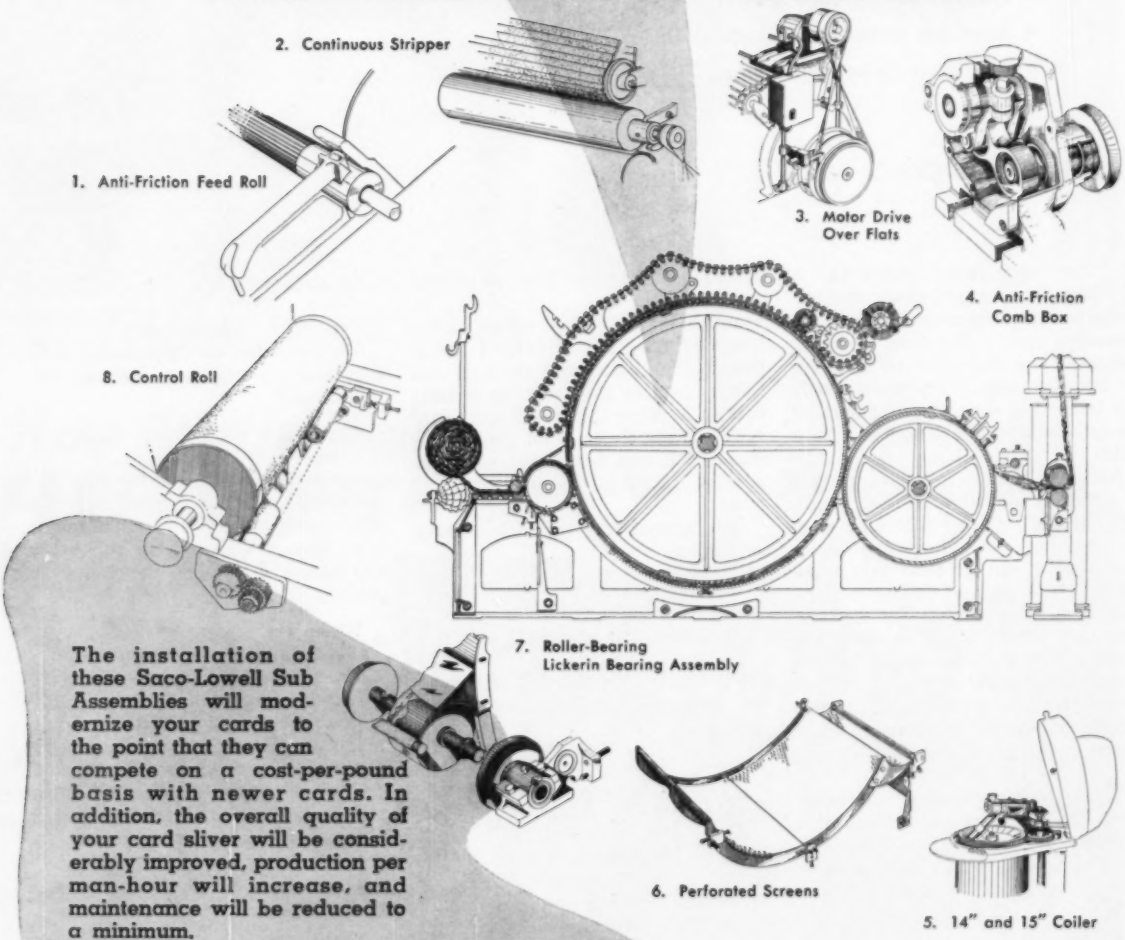
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POINTERS for SUPERVISORS

"These Things Get the Job Done for Me"

• How do you make people want to do what they should do? How do you get and keep the kind of employee cooperation you must have to get the job done?

• Recently 25 successful supervisors were asked these questions. Their answers, summarized here, give you a chance to compare your own methods with those that have helped other supervisors.

By ERNEST W. FAIR

The biggest job of every supervisor is getting and keeping the wholehearted cooperation of the men and women under his direction. If employees go along with your ideas and plans and schedules, your department gets more and better work done than any amount of driving and pressure can ever accomplish.

Most successful supervisors develop their own pet methods of getting maximum results from their employees. Recently 25 of them were asked how they go about getting the job done. Here are their answers.

1. "My job is to get things done through people, and I never let myself forget it. Every step I take is planned toward that goal. The hardest thing I had to learn was that I was not a ringmaster or watchdog over the people in my department. When this clear understanding of my real role as a supervisor came to me, I got better results and my work was made a lot easier."

2. "The most important thing that has helped me get more done in my department is a rule of my own to make sure that every man gets full credit for any job well done. I've found that the surest way to discourage initiative and extra effort in my people is to overlook such things. Even where we have a bonus for such work, I've found the men are just as eager for recognition of what they have done as they are for that bonus."

3. "I try to lead rather than to force my people to do the job. Whenever a difficult job comes up, I've found it cleared away much faster when I stepped in and took the lead instead of pointing it out and telling the men to get the job done themselves. Any given job always gets done in far less time than under the old method."

4. "The biggest thing I've learned is that you have to be constantly on guard against hurting any employee's pride. Sure, you can hire the kind of people who have little pride and are never affected by anything you may do; but they're not the kind of employees who make any supervisor's job easier for him. Pride is a mighty important ingredient in any worth-while worker. Guard it with care and caution."

5. "The most important thing I do to keep my department operating smoothly is that I keep studying each man and woman to make sure what particular incentives affect that individual the most. I doubt there are any two alike. When I've found the one thing that gets top results from any individual, then I know how to handle that employee. It sometimes takes several weeks to discover what it is, but after that there's a lot of smooth sailing."

6. "One thing I've found mighty important is to explain everything. Just telling a man to do something or taking it for granted that he understands all about the problem causes a lot of extra work afterwards and sometimes costly slowdowns."

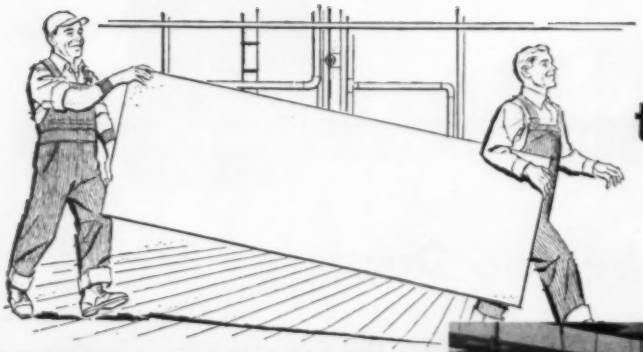
7. "I set the example I want them to follow. No department in any company is any better than the example set by the supervisor. If he takes a sloppy attitude toward the job, his people can't help but follow suit. If he sets an example of initiative, love of his work, interest in every job, etc., his people will follow suit."

8. "I've found the most important single thing is to be extra careful of what you say and how you say it. When you do that, your words will mean something to the people you're talking to; and you cut down possibilities for misunderstandings and mistakes.

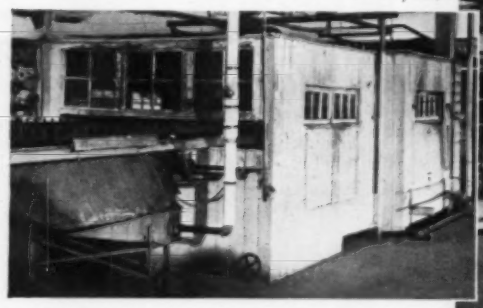
9. "My chief policy is to promote a competitive spirit among the workers in my department. Competition makes for better results, even if it's nothing more than to see who can keep his work the cleanest, make the fewest mistakes, or some other element strictly among the workers themselves. One word of caution: make sure it's not belligerent competition."

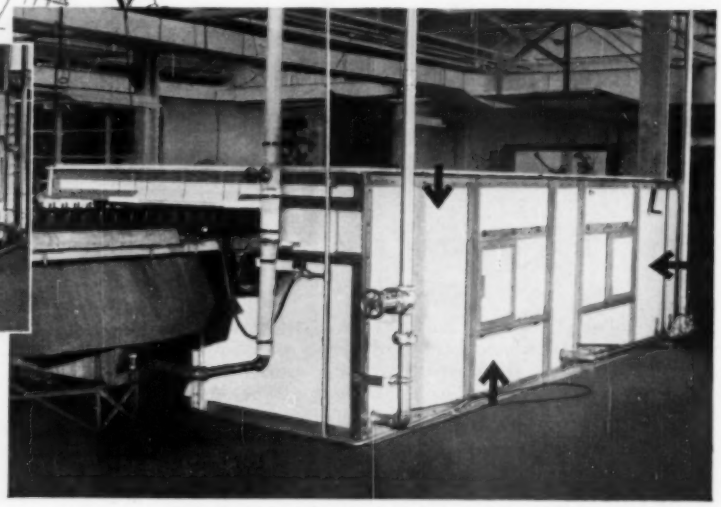
10. "To me it's most important that a supervisor learn to be a good listener instead of completely dominating every conversation he has on the job with the people under him. When you're a good listener, you draw your workers out—get them to thinking more about the work, developing their own ideas, and taking a greater personal interest in the job."

CONTINUED ON PAGE 182



NEW tenterframe housing constructed by plant labor





Old tenterframe housing, made of wood was inefficient as well as unattractive. Constant maintenance was required.

New tenterframe housing, made of Marinite panels (indicated by arrows) provides maximum heat control and smart, modern appearance. Easy to keep clean.

At a leading silk mill . . .

J-M MARINITE® builds and insulates in one operation

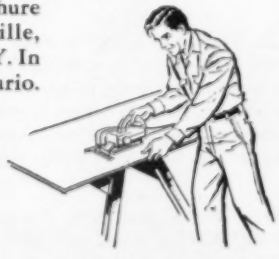
When an old tenterframe housing passed the point of economical efficiency last year, officials of a well-known eastern silk mill turned to J-M Marinite. For they had learned on a previous job that Marinite provides three important advantages over other materials.

1. MARINITE COSTS LESS TO ERECT—the mill's own construction crews could easily perform the work using ordinary woodworking tools. The large easy-to-handle sheets go up fast.

2. MARINITE GIVES BETTER HEAT CONTROL—low heat capacity reduces heat-up and cool-off time. Homogeneous material won't bulge, settle or sag—eliminates "hot spots." Outside framing cuts through-metal heat loss.

3. MARINITE REQUIRES NO MAINTENANCE—inorganic material is unaffected by moisture. Won't rust, rot, mold or corrode. Normally requires no protective coating. Minimizes down-time. Lasts indefinitely.

Made from asbestos and diatomaceous silica, Marinite is the ideal insulating sheet material for tenterframe housings, agers, ovens, driers, and other high temperature equipment. Find out how you can take advantage of its many benefits. Write for new 16-page brochure IN-153A to Johns-Manville, Box 60, New York 16, N. Y. In Canada, Port Credit, Ontario.

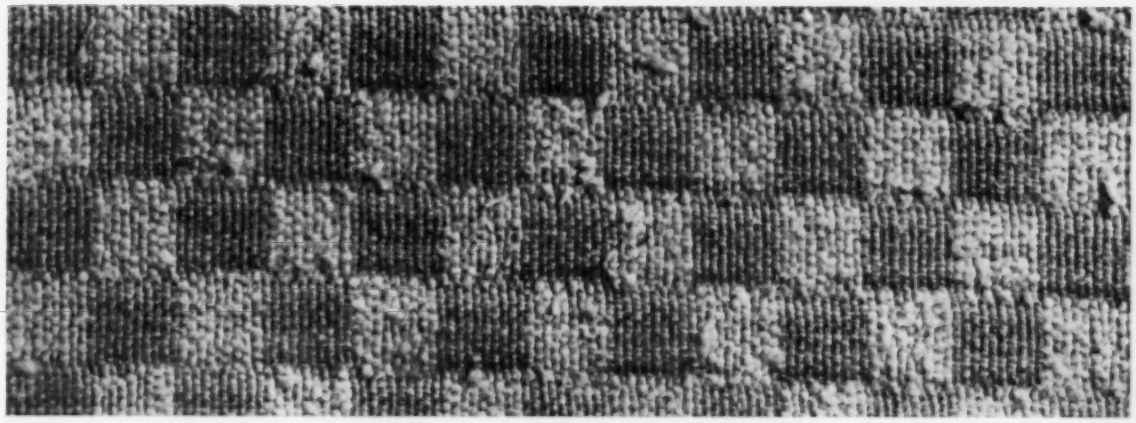


Easy to work, Marinite may be cut, drilled, and shaped with ordinary woodworking tools.

Johns-Manville *first in* INSULATION

MATERIALS · ENGINEERING · APPLICATION

EQUIPMENT and SUPPLY NEWS



Yarn-Bulking Device

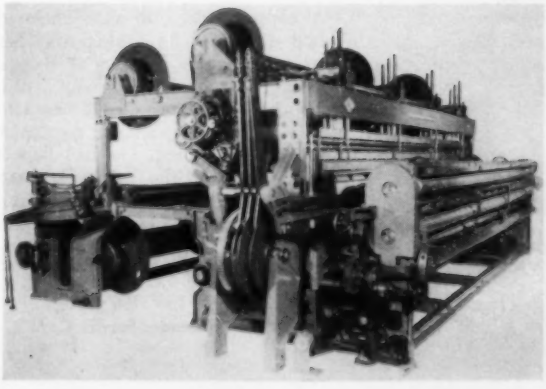
American Enka Corp., 206 Madison Ave., New York, N. Y., has developed a bulking device for yarn that can be easily attached to any machine with a constant-speed yarn take-up such as winders, uptwisters, and redraw machines.

The device is equipped with adjustable positive controls for setting the degree of bulk. Bulk regularity can be controlled from package to package as well as in the individual package. Loop sizes range from very fine to very small and are controlled by a combination of adjustments and the yarn type.

The bulk filament yarns give high cover, subdued luster, and a more crisp and resilient fabric hand. The yarns must contain some twist to be properly bulked. The amount of twist depends on the filament denier, the yarn denier, and the yarn to be bulked.

Licenses will be made available on a 1% royalty rate based on the yarn price.

Circle T-1 on Reader-Service Card



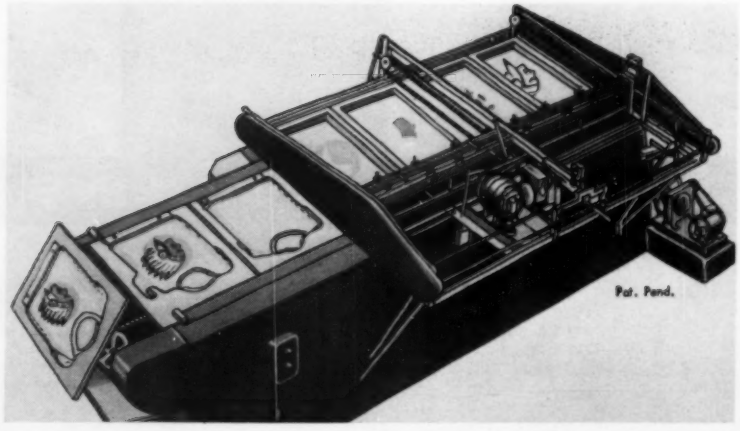
Double-Face Carpet Loom

A double-face carpet loom has been introduced by Lansdowne Steel & Iron Co., Morton, Pa. The loom is being produced to weave carpets of a lighter grade than those normally woven on wilton wire looms.

The looms are available in 9-, 12-, and 15-ft. widths and incorporate many of the features that are used in Lansdowne's wilton-weave carpet looms, such as rack-and-pinion heddle motion, positive spike-roll take-up, positive warp and pile let-off, heat-treated profiled treadle-box cams, etc.

This double-shuttle loom weaves one-, two-, three-, or four-shot goods and takes 32-in.-dia. fine chain-yarn beams and 40-in.-dia. face-yarn beams.

Circle T-2 on Reader-Service Card



Silk Screen Printer

An automatic screen-printing machine adapted to textiles or paper has been announced by American Automation, Inc., 175 W. Jackson Blvd., Chicago 5, Ill. A conveyor carries the fabric through the machine and automatically presents fresh sections to the screens in perfect register. Two-way squeegees can be adjusted for the desired pressures. A built-in infrared dryer dries each color before the next color is applied.

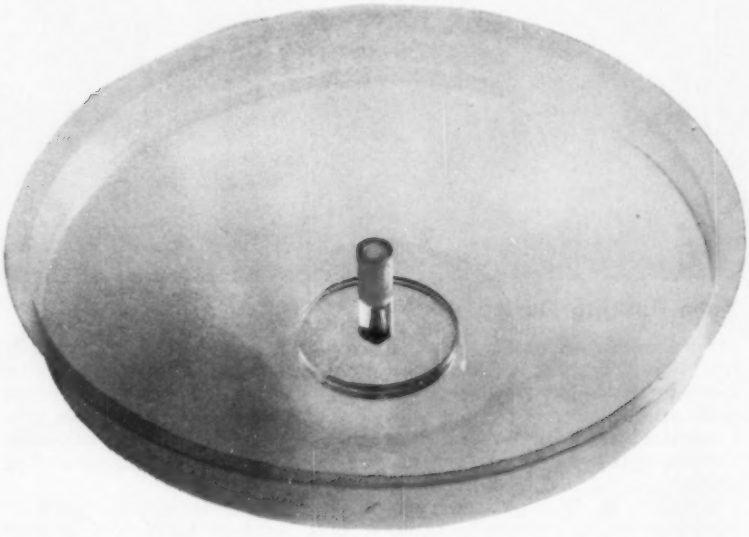
Circle T-3 on Reader-Service Card

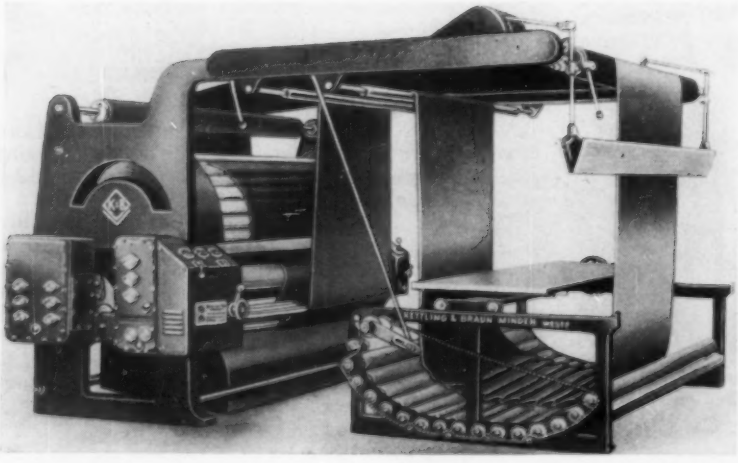
Looper Guard

Made of clear smooth plastic, a looper guard supplied by Plastic Industries, Inc., Box 224, Athens, Tenn., covers the screw heads near the points on the outside rim of the looper.

The guard is designed to decrease picks and pulls under the looper. Stockings are prevented from soiling by oil. The guard is fastened to one screw already on the machine.

Circle T-4 on Reader-Service Card



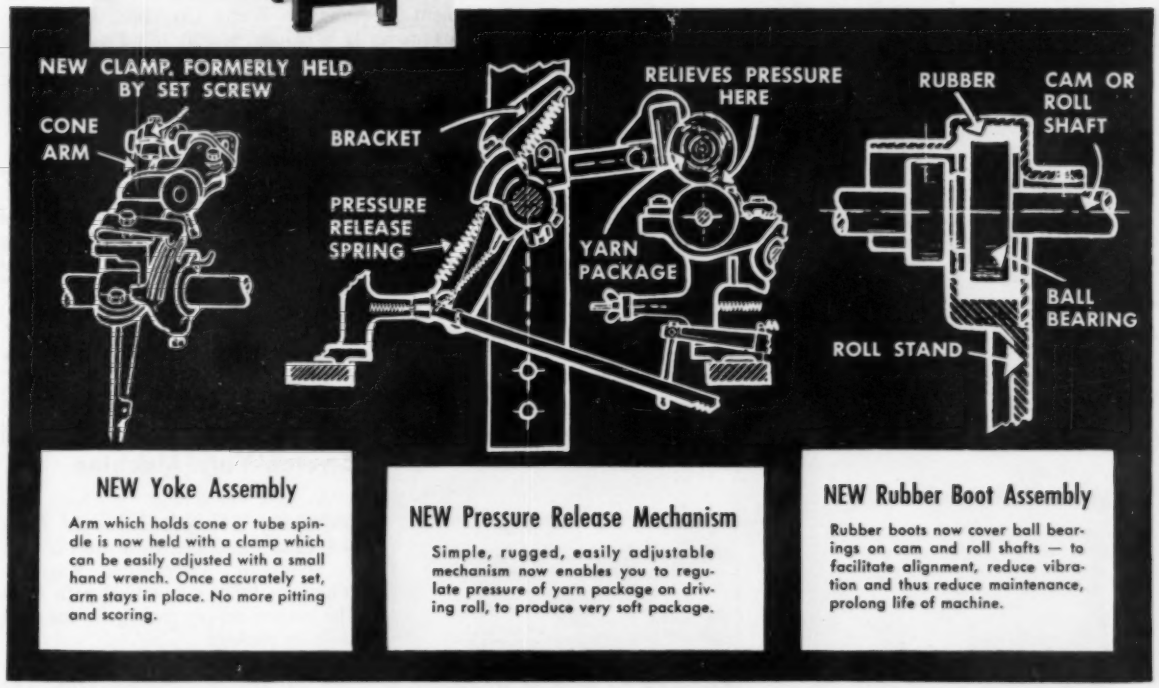


Napper

A napping machine with enclosed V-belt drive and 24 worker rolls has been marketed by Kettling & Braun, Minden, Westphalia, Germany. Roller speed and cloth speed are infinitely variable to suit the particular fabric being napped. Control panels on each side of the machine make for convenient setting and control. Stellite American Co., 60 E. 42nd St., New York 17, N. Y., is the American representative.

Circle T-5 on Reader-Service Card

FOSTER
MODEL 102 WINDER



NEW Yoke Assembly

Arm which holds cone or tube spindle is now held with a clamp which can be easily adjusted with a small hand wrench. Once accurately set, arm stays in place. No more pitting and scoring.

NEW Pressure Release Mechanism

Simple, rugged, easily adjustable mechanism now enables you to regulate pressure of yarn package on driving roll, to produce very soft package.

NEW Rubber Boot Assembly

Rubber boots now cover ball bearings on cam and roll shafts — to facilitate alignment, reduce vibration and thus reduce maintenance, prolong life of machine.

Foremost in Flexibility — Continuously Modernized

The Foster Model 102 produces cones with increased taper, assuring free delivery at the knitting machine. It was first to produce the open wind cones most suitable for knitting and will wind any type or count of spun yarn . . . will provide 9 different angles of wind from 9° to 18°, just by changing a few gears . . . can be readily equipped with a conditioning attachment . . . will produce a variety of cone tapers . . . will wind dyed yarn even when damp . . . can be built to wind 6″ or 7″ traverse knitting cones, warping cones, parallel tubes or dye packages — or short traverse cheeses.

Outstanding flexibility has made the Foster Model 102 preferred choice for many purposes for years. It holds its pre-eminence because our policy of continuous modernization constantly improves on its overall efficiency and its already long life expectancy . . . though improvement on some features may be impossible. A few relatively new improvements are illustrated herewith.

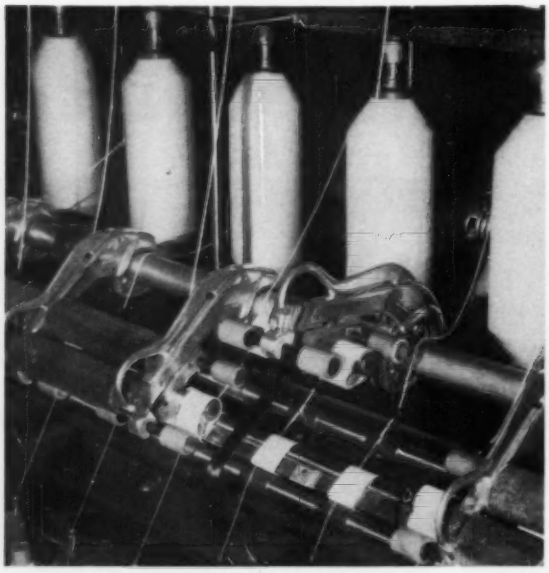
Send for Bulletin A-95.
Complete data — no obligation.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.
Southern Office, Johnston Bldg., Charlotte, N. C.

Canadian Representative — Ross Whitehead & Company, Limited, 1475 Mountain St., Montreal, Que. and 35-37 King St., Toronto, Ont.

European Representative — Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England

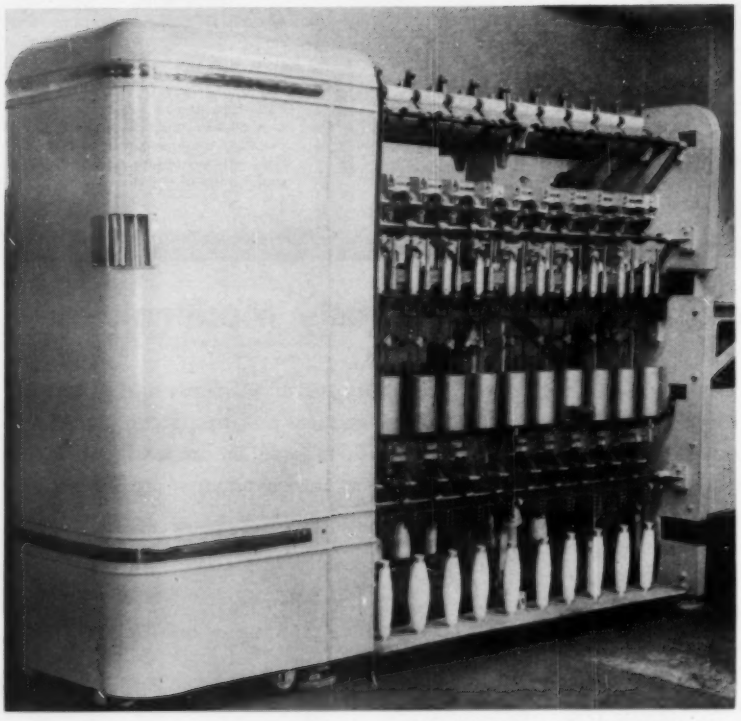


Top Drafting Aprons Attached To Guide Saddle Arm

On Rieter spinning frames, the top aprons of the double-apron drafting system are now attached to the guide saddle arms and rise with them, according to an announcement by American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. When an arm is tilted upward, all the corresponding top rolls, including the one driving the aprons, go with it for convenient cleaning. The arms grip the rolls centrally on their shafts between the bosses, and lateral alignment of the apron roll is maintained by means of a rigidly constructed clamp that is machined to close tolerances.

A simultaneous improvement in the guide-saddle arm is a new leverage that increases the pressure on the top rolls without an increase in the air pressure or spring pressure applied to the arm.

Circle T-6 on Reader-Service Card



Stretch-Yarn Machine

A new false-twist machine for producing crimped synthetics yarns has been developed by Ernest Scragg & Sons Ltd., Macclesfield, England. The yarn follows a vertical path from the bottom supply package to the final delivery package.

Output per spindle is about 4 oz. per 24 hrs. on standard yarn. The yarn is delivered with almost zero twist. The yarn is drawn from the supply package through a small tension, a yarn delivery roller, a heat-setting unit, the spindle, and a yarn take-up roller that feeds the yarn on a cheese.

The spindle that inserts the twist in the yarn is designed to operate at a minimum speed of 30,000 rpm. The yarn take-up per spindle on 60-den. nylon is about 17,500 meters per 24 hrs.

The standard model will have 140 spindles. The capital cost is about $67.20 per spindle. Crowther Ltd., 212 Victoria Ave., Montreal, Que., Canada, is the agent.

Circle T-7 on Reader-Service Card

Loom for Weaving Jute

A loom for weaving 168-in.-wide jute backing for tufted carpets at 72 ppm. is available from American Safety Razor Corp., Staunton, Va. The loom is built by Van De Wiele, Marke, Belgium.

A 210-in. loom operates at 60 ppm. The loom has an electro-magnetic brake and is started and stopped with a start-stop electric motion. It also has a forward and reverse inching motion and electrically controlled bang-ing-off. The shuttles carry a 15x1¾-in. bobbin. The picking action has been speeded up.

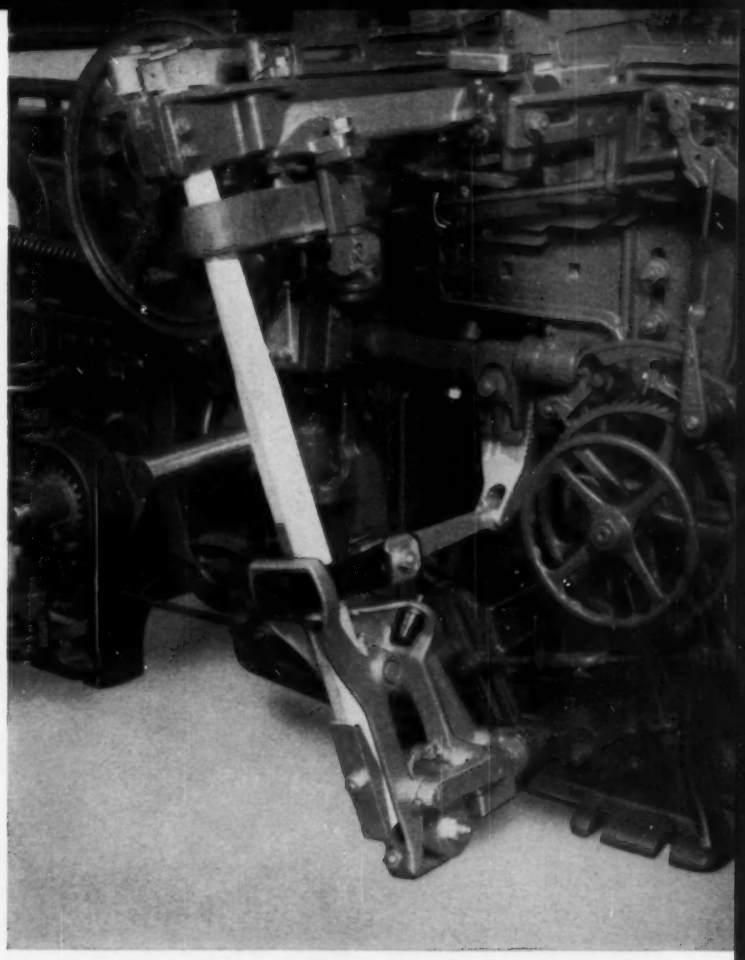
The looms are installed and serviced in the U. S. and Canada by American Safety Razor Corp.

Circle T-8 on Reader-Service Card

NEW DRAPER LINKAGE PARALLEL ASSEMBLY

IMPROVES LOOM OPERATION

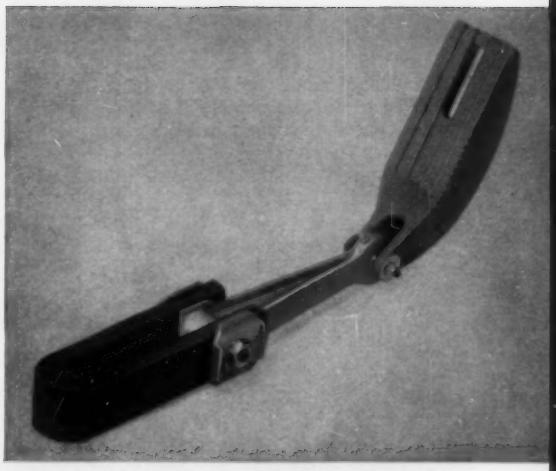
CUTS MAINTENANCE COST



Extensive mill trials prove the Draper Linkage Parallel Assembly results in a more uniform, controlled picking action. This parallel assembly eliminates "jump" and "play" in the picker stick . . . improves overall loom operation and reduces wear on pick motion and parallel parts.

A fixed power block position allows more uniform power settings to be maintained. Clamp-fit of the assembly on the rocker shaft permits easy, fast application. *Picker sticks may be replaced without altering Parallel settings.*

For complete details on this *cost* and *labor-saving mechanism*, contact your nearest Draper representative or write:

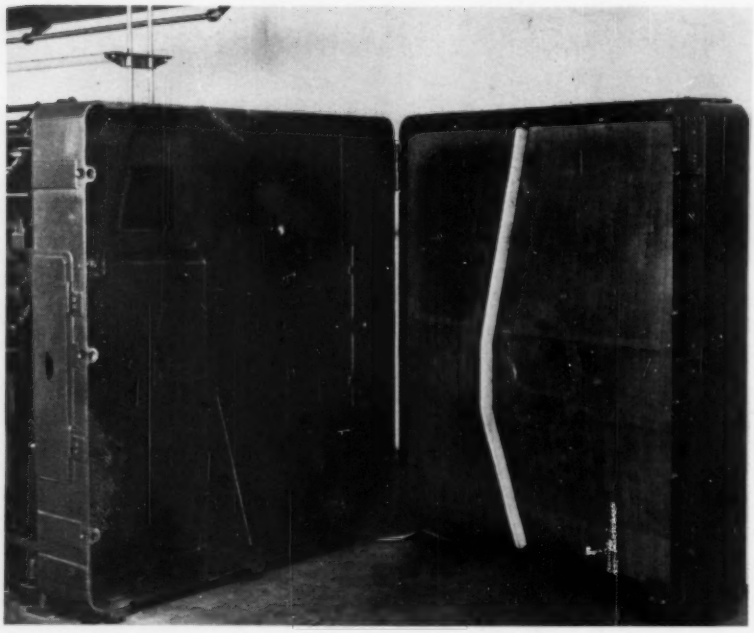


New aluminum pick arm and lug strap connection is recommended for above installation.

DRAPER CORPORATION

HOPEDALE, MASS.

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.



Thread-Aspirator Filter Box

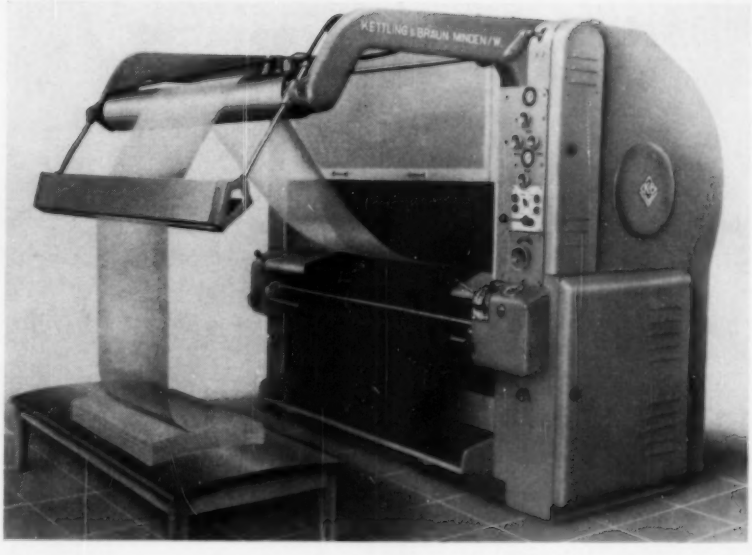
The interior of the filter box for the thread-aspirating system on Rieter woolen and worsted spinning frames has been made accessible by means of a hinged door, according to American Rieter Co., Inc., P. O. Box 147, Arlington, N. J. As a result, it is no longer necessary to dismantle the box in order to clean the filter grid and the air duct that extends along the frame. The change is particularly advantageous where greasy fibers are involved.

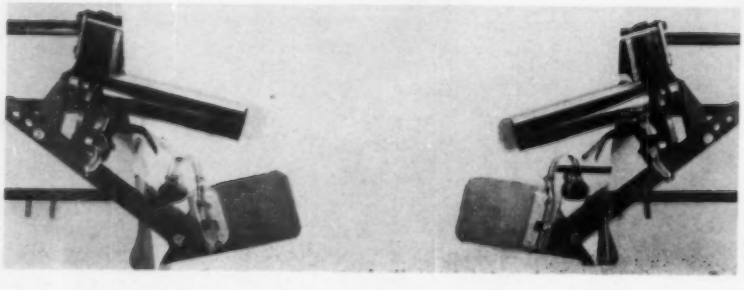
Circle T-9 on Reader-Service Card

Decatizer

An enclosed decatizer with a separate cylinder for the extraction and drying cycle of the decatizing process has been announced by Kettling & Braun, Minden, Westphalia, Germany. Stepless speed control up to 150 yds. per min. is provided. Wrapper tension can be regulated to suit the fabric. All controls are mounted on a single panel. Stellite American Co., 60 E. 42nd Street, New York 17, N. Y., is the American representative.

Circle T-10 on Reader-Service Card





Circle T-11 on Reader-Service Card

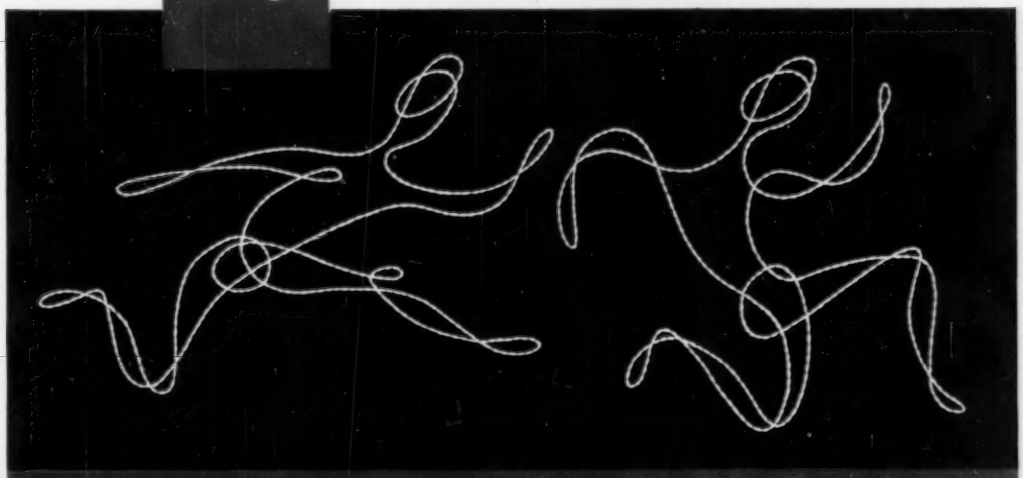
Clip Collector

An attachment that removes clips from fabric selvages before they can cause damage in subsequent processing has been announced by Guider, Roll and Service Co., P. O. Box 3747, Daytona Beach, Fla.

The unit is usually mounted just below cloth guiders. A powerful magnet attracts the clips and opens them slightly. A stainless-steel plate then engages the clip and strips it from the cloth as it moves on.

32 million yard dash!

Q. How do you break speed records without breaking yarn?



A. Use IRC Continuous Process Rayon—unblemished by human hands!

Coming in on the beam are 32 million yards* of IRC Continuous Process rayon that could easily fly right through your loom without stopping for a break.

The reason: unequalled uniformity, particularly in the twist. Big cause of broken filaments, slack twist, is practically unheard of in IRC Continuous Process rayon. And knots are few and yarn-miles between. In fact, mile after mile, it's perfect inch by inch.

It's 100% impossible for anyone's hands to damage this rayon while it's spun—they never touch it!

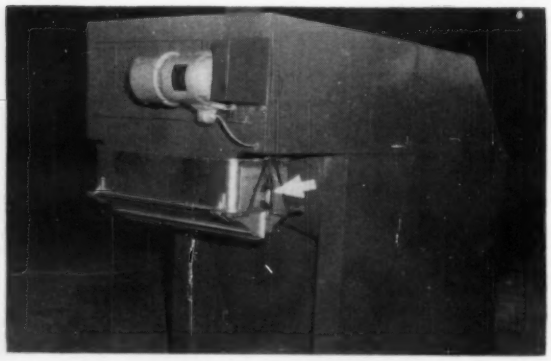
You'd think from the low cost that it was just *any* rayon—but this is the same yarn weavers of the most critical fabrics insist on! Give your looms a break instead of a breakdown—specify Continuous Process rayon.

*A typical beam of 150 denier yarn has 700 strands, each approximately 46,000 yards long. It adds up to over 32 million yards.

I·R·C

INDUSTRIAL RAYON CORPORATION
CLEVELAND, OHIO

 For more information, write direct or use Reader-Service post card.



Blending-System Door

Fiber Controls Corp., P.O. Box 351, Gastonia, N. C., announces an improved weighing pan (arrow) for its blending system. The door of the pan is pneumatically operated to lighten the weight of the pan. Consequently, 1-oz. measures of fibers can be dropped with close tolerances.

The speed of door operation is adjusted by air pressure applied to a cylinder (arrow) mounted on the pan. A restrictive valve in the air line snubs the doors to prevent slamming and damage.

Circle T-12 on Reader-Service Card

Railway Sewing Machine

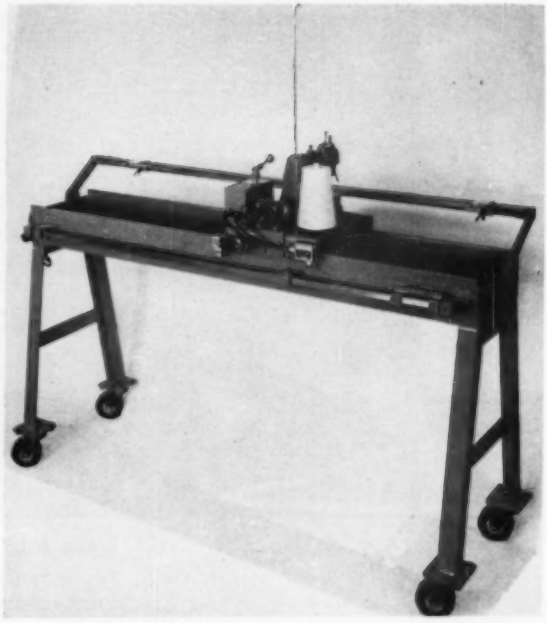
Three general arrangements are possible with a railway sewing machine, Model-LC, made by Curtis & Marble Machine Co., 72 Cambridge St., Worcester, Mass. The machine can be used (1) as a track, or top, to be mounted on various machines or to replace existing equipment, (2) as a stationary machine mounted on legs, and (3) as a portable machine mounted on legs equipped with locking casters.

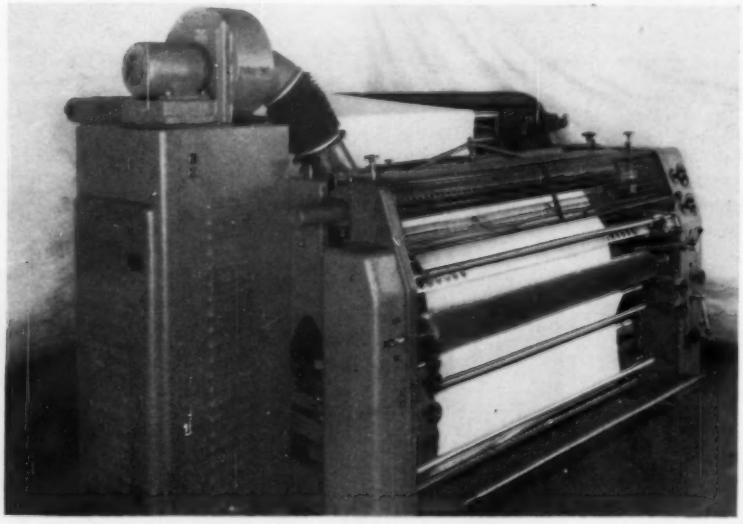
Either a chain-stitch or butted-seam sewing head can be supplied. The Model LC incorporates modern design with high-speed simplified operation.

A single hand lever controls the sewing cycle. To operate the machine, the operator places the cloth on the holders; and with the sewing head at the extreme left, he throws the lever forward. The head will not start until the needle is at the selvage. At the end of the seam, the head stops automatically. And after the operator removes the cloth from the holders, he throws the lever to reverse and the head returns to the starting position ready for the next seam.

Micro switches provide adjustment points to handle various widths of fabrics.

Circle T-13 on Reader-Service Card



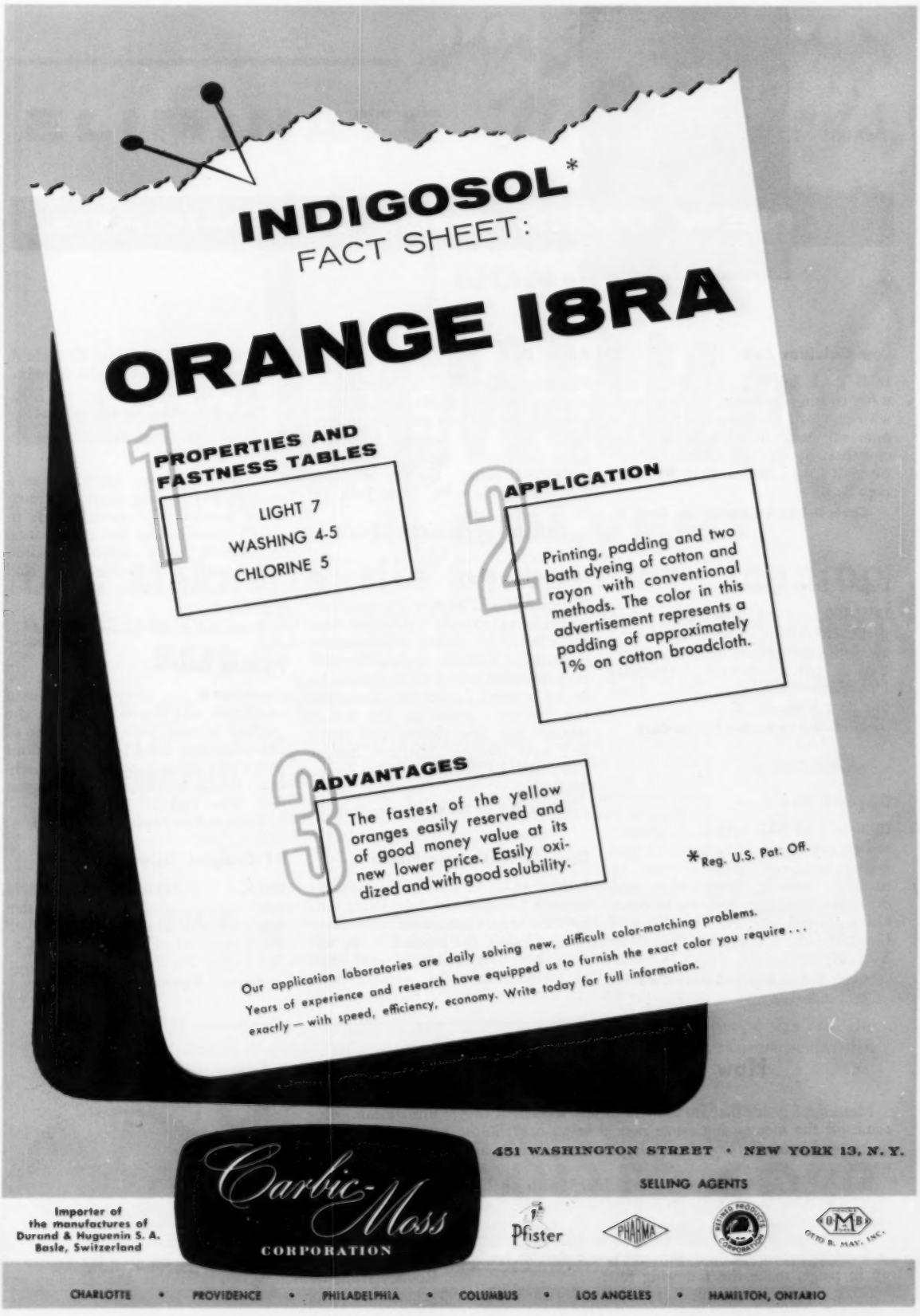


Woolens and Worsted Shear

A single-bladed shear that features 21,600 cuts per minute at a linear fabric speed of 20 to 60 yds. per min. has been announced by Kettling & Braun, Minden, Westphalia, Germany. Stellite American Co., 60 E. 42nd St., New York 17, N. Y., is the American representative. The variable-speed mechanism can be adjusted to provide the proper speed for different weights of fabric.

Circle T-14 on Reader-Service Card

CONTINUED ON PAGE 212


INDIGOSOL*
FACT SHEET:
ORANGE I8RA
1
PROPERTIES AND FASTNESS TABLES
LIGHT 7
WASHING 4-5
CHLORINE 5
2
APPLICATION
Printing, padding and two bath dyeing of cotton and rayon with conventional methods. The color in this advertisement represents a padding of approximately 1% on cotton broadcloth.
3
ADVANTAGES
The fastest of the yellow oranges easily reserved and of good money value at its new lower price. Easily oxidized and with good solubility.
*Reg. U.S. Pat. Off.
Our application laboratories are daily solving new, difficult color-matching problems. Years of experience and research have equipped us to furnish the exact color you require . . . exactly — with speed, efficiency, economy. Write today for full information.
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NEW DYES and CHEMICALS

Low-Calcium Salt

PCB Rock Salt . . . for dyeing and water-treating processes. Brines made with this salt contain less than 200 ppm. calcium, which is kept from precipitation by special treatment. Morton Salt Co., 120 S. LaSalle St., Chicago 3, Ill.

Circle D-1 on Reader-Service Card

Liquid Detergent

DW-300 . . . a high-sudsing product particularly useful in scouring where a good oil emulsifier is necessary. Neutral in pH. Industrial Detergents Div., Lever Bros. Co., 205 E. 42nd St., New York, N. Y.

Circle D-2 on Reader-Service Card

Disperse Dye

Celliton Fast Blue LAFR . . . characterized by superior fastness to gas-fading and very good fastness to sunlight, pressing, perspiration, and dry-cleaning. Suggested for acetate, Orlon, Dynel, and Acrilan. General Dyestuff Co., 435 Hudson St., New York 14, N. Y.

Circle D-3 on Reader-Service Card

Azoic Dye

Rapidogen Black J . . . stabilized azoic composition in powder form; recommended for printing on wash fabrics. Very good washfastness, generally good fastness to light, perspiration, and dry-cleaning. General Dyestuff Co., 435 Hudson St., New York 14, N. Y.

Circle D-4 on Reader-Service Card

Diazonium Salt

National Blue 2BS Salt . . . produces greenish to reddish shades of blue on cotton or rayon, with various naphthols. Can be applied by padding, pressure machines, in open tubs, or by printing. Fastness characteristics are very good; so the dye is suitable for play clothes and sports and work clothes. National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Circle D-5 on Reader-Service Card

Durable Antistatic Finish

Niatex AG-2 . . . produces static-free finishes resistant to laundering and dry-cleaning. Compatible with many other finishes, the product works well on Orlon, Dynel, Acrilan, and other synthetics. Can be applied from water or solvent solutions. Carbide & Carbon Chemicals Co., 30 E. 42nd St., New York 17, N. Y.

Circle D-6 on Reader-Service Card

Scouring Agent

Unishade . . . was developed as a scouring and leveling agent for dyeing nylon hosiery. The product aids in good leg-welt unions and can be used to partially strip down over-dyed shades with very level effects. Kali Mfg. Co., 427 Mayer St., Philadelphia 25, Pa.

Circle D-7 on Reader-Service Card

Printing Gum

Carobene R . . . designed to be used specifically with Rapidogen colors, the product is used without addition of any other thickeners to produce print pastes that do not coagulate. Buschman Products, Inc., 369 Lexington Ave., New York 17, N. Y.

Circle D-8 on Reader-Service Card

KF-Reagent Diluent

DO-K-5 . . . is a stabilized diluent that can be added to Karl Fisher reagent to extend its usefulness. Shelf life is excellent. Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

Circle D-9 on Reader-Service Card

How To Check Oxycellulose Formed in Mercerizing

Mercerized goods that are not completely washed as they come off the mercerizing range may develop oxycellulose in exposed areas if they are let lay too long before final washing.

If they are finished in white and blued with an iron-type blue, blue stains will develop in the areas that were exposed to air.

To distinguish these stains from those that might occur in finishing where finishing pad and tenter are not hooked up in range, make the following test:

Scour the stained sample in mild soap, 1 gram per liter, until clean.

Rinse the sample thoroughly and steep it for 1 hr. in 1% ferrous sulfate.

Wash very well in cold water, and then put the sample in a 1% solution of potassium ferrocyanide. If oxycellulose is present, blue stains will appear, corresponding to the areas that were exposed to air while carrying excess caustic. The remedy for iron-blued goods that have such stains is a thorough scour in soap and soda ash in a log washer or Rodney Hunt washer. When refinished, the stains do not generally reappear.

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THIS IS NO. 115 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

HOW THE TUFTED TEXTILE INDUSTRY USES THE MODIFIED TAPER CONE

The tufted textile industry has adopted the 7° 22½ minute taper cone as the standard put-up for their coned yarn. This particular cone taper seems to have the most desirable characteristics of the several types available, so it is used quite generally by tufted textile mills for putting up yarn on cones.

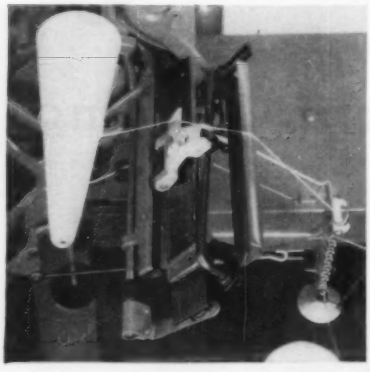

Figure 1 — Attachment for producing 7° 22½ minute taper cones on No. 8 Winding Machines equipped with a two-piece traverse frame.

Since the taper represents a departure from the cone tapers that were once considered more or less standard, mills who wish to wind this yarn find it necessary to purchase new machines unless their old ones can be converted to this taper.

Universal Winding Company has an attachment that makes it possible to convert No. 6 and 8 Winding Machines, presently in place, to 7° 22½ minute coning. This attachment is designed to be applied either to the one or two piece traverse frame and consists of a cone holder and spindle extension to hold a 7° 22½ minute taper cone. Instead of a spiral traverse frame back that must be machined to agree with the required taper and customarily used for guiding the traverse guide holder, this attachment is designed with an adjustable guide rod.

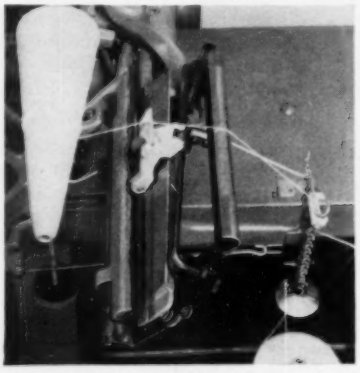

Figure 2 — The same attachment used on a No. 8 Winder equipped with a one-piece frame. Equally good results can be obtained.

The purpose of the guide rod is to provide thrust for the traverse guide holder the same as is done with the more elaborate traverse frame back. The guide rod also provides flexibility in that the same guide rod can be adjusted to accommodate tubing or any taper cone up to the 7° 22½ mimute angle. Of course the tube holder or cone holder must be changed to agree with the carrier required to be wound upon.

The guide rod is attached to the traverse frame with two holders. These holders are made with elongated slots to permit adjusting the guide rod for use on either the one or two piece traverse frames.

When adjusting the guide rod to make it agree with the cone taper, the traverse frame should be located in the starting position with an empty cone on the holder. To bring the rod into a line parallel with the surface of the cone, it should be adjusted with the guide at the nose of the cone first, then the adjustment should be repeated with the guide at the base of the cone.

March, 1956 — 23.5.8

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

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PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA LOS ANGELES MONTREAL and HAMILTON

QUESTIONS and ANSWERS

►TEXTILE WORLD'S editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Loom Workloads Differ

Technical Editor:

We read the article on "Mill Efficiency on Print Cloth and Corduroy" in TW, April, '55, with great interest. We wonder if there are any similar figures for woolen looms? (9943)

Here's a round-up of loom assignments for several mills in the U.S. The assignments vary according to the location and company policy.

A large worsted mill has a loom assignment of 12 W3 82-in. Crompton & Knowles 4x1 looms. The mill weaves gabardines, tropicals, and fancy worsteds. Looms run at 140 ppm. Weavers do not fill their magazines. Loomfixers are assigned 40 looms, but they do not put in warps.

A medium-size mill weaving fancy worsted fabrics has loom assignments of eight looms to a weaver on 82-in. W3 C&K looms at 136 ppm. Weavers fill their own magazines. Loomfixers take care of 24 looms and put in their own warps.

Another worsted mill has C&K 4x4 W3 convertible 82-in. worsted looms weaving pick-and-pick fabrics. Looms are equipped with filling-feeler motion. Weavers are assigned four looms, and loomfixers take care of 24 looms and put in their own warps.

In a blanket mill with 110-in. automatic woolen looms with overhead multipliers, weavers are assigned six looms. Fixers take care of 30 looms, but they put in no warps.

You Can Knit Twill-type Fabrics

Technical Editor:

We want to produce a knitted twill-type fabric with a face of 210-den. nylon that can be brushed. What type of machine do we need? (9954)

This fabric can be knitted successfully on 24- and 28-cut Wildman spring-needle machines. Arrange the needles alternately with long and short butts. Arrange the pressers two high-cut and two low-cut. Set the presser cams so that the high-cut pressers are moved toward the needles on the first two feeds and the low-cut pressers are moved on the next two feeds.

Here's the set-up on six feeds:

Feed No. 1	Float short-butt needles Knit long-butt needles
Feed No. 2	Float long-butt needles Knit short-butt needles
Feed No. 3	Float short-butt needles Raise long-butt needles Remove presser cam from action Tighten stitch. Feed 210-den. nylon
Feed No. 4	Float long-butt needles Knit short-butt needles
Feed No. 5	Float short-butt needles Knit long-butt needles
Feed No. 6	Raise short-butt needles Remove presser cam from action Tighten stitch. Feed 210-den. nylon

Make sure that the stop motions are in excellent condition because the heavy nylon yarn will create havoc with your needles if a smash occurs.

Crabbing Sets Cloth

Technical Editor:

What is the purpose of crabbing and how is it done? (9937)

Crabbing is a finishing process used on worsted and woolen fabrics. The objects of crabbing are to set the cloth at the desired width, to fix the warp and filling threads, and to free the cloth from strains to prevent cockles, creases, or other forms of irregular shrinkage in later stages of finishing.

Crabbing is done by passing the cloth at full width through boiling water, by immersing it in boiling water, or by forcing steam through the cloth. A combination of these methods is sometimes used.

Best Way of Finding Average Yarn Number

Technical Editor:

We are a small mill producing several yarn numbers. Here is a typical example of our production:

10s— 768 spindles: 500 lbs.
16s—1,152 spindles: 350 lbs.
20s—1,152 spindles: 300 lbs.
24s— 768 spindles: 180 lbs.
30s— 768 spindles: 120 lbs.

What is the best way to find our average yarn number? (9916)

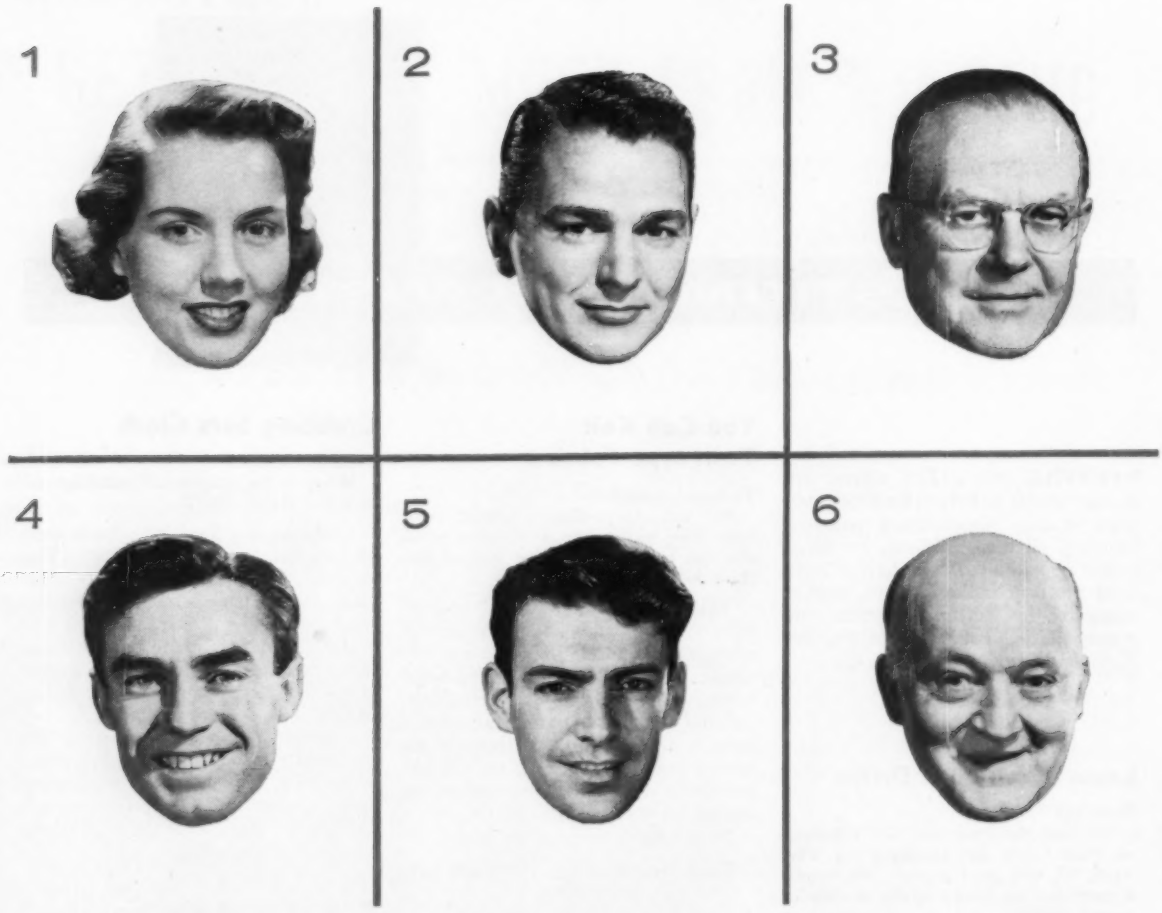
The most practical way to find the average yarn number and roving hank is to divide the total yards by the pounds of production. In your case:

10 x 500 = 5,000 (840-yd. lengths)
16 x 350 = 5,600 "
20 x 300 = 6,000 "
24 x 180 = 4,320 "
30 x 120 = 3,600 "

1,450 24,520 "

24,520 ÷ 1,450 = 16.95

This average yarn number can be used for a fair comparison between the total cost per pound for each week or period. A lower cost per pound would be expected from a coarser yarn.



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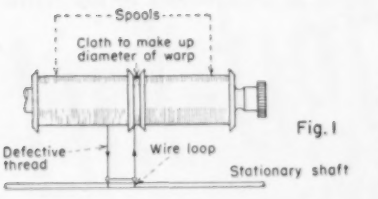


Fig. 1

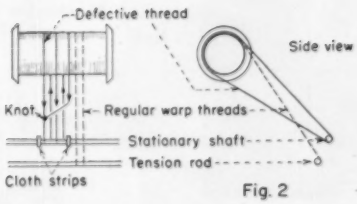


Fig. 2

More Ideas on Removing Tricot Threads

We were interested in the methods used to remove superfluous or defective threads from tricot beams described in TW Dec. '55, p. 176. We found two other ways of doing this job. Here's how the first one works:

The threads are guided to any convenient part of the warp-beam shaft. On Reiner machines, we found the hub of the gear suitable. We usually guide the threads to a space between spools.

The space between the spools is built up to the diameter of the yarn on the spool with cloth strips (Fig. 1). As the warp unwinds, the defective thread is wound up between the spools. As the warp decreases in size, the thread is pulled tighter so the waste is cut off occasionally and the diameter of the hub restored to the diameter of the yarn on the spool.

To keep the tension correct, we ran the defective thread around a stationary shaft that runs parallel to the warp beam and back around the spool. The thread is wrapped several times around the spool and the stationary shaft (Fig. 2). The end of the thread is then tied to the first wrap of thread around the spool and the shaft.

As the warp unwinds, the defective thread unwinds around the spool and the shaft at the same speed as the warp beam. The waste thread is cut off at intervals when the wraps of thread become too many. Cloth strips tied around the stationary shaft keep the threads from wandering. (K-2895)

How To Prevent Winder From Stopping Too Soon

Premature stops that occur immediately after doffing our Schweiter automatic hollow-cop winder formerly caused us trouble.

While there are many factors that can cause premature stops, we found the main cause to be yarn that was not placing itself in the proper path between the spindle and the center bushing when a new winding cycle was ready to take place.

At the start of the doffing operation, the guide often comes to rest at its highest position. After doffing has been completed and while the cop is being lowered by the grippers, the tip of the front fiber gripper may push the yarn off-center between the cop and the thread guide. The off-centered yarn does not come within range of the spindle, and slack yarn results. This slack in the yarn sets the stop motion in action, and the winder is stopped prematurely.

The return action of the front gripper is limited by the length of the flat spring, which seems to be slightly short in basic construction. To avoid making longer flat springs, the top of the front grippers was shortened ½ in. This change eliminated the slack-yarn problem without affecting the action of the grippers. We no longer have premature stops and excessive ends down. (K-2790)

M. D. Chandler, Philadelphia, Pa.

How To Test Fuses With a 120-v. Bulb

The common method of testing fuses is to make a contact between two fuses with two terminals of the test light. If the production power is 220 v., the test light must be a 220-v. bulb. Often, however, a 220-v. bulb is not available, and the electrician tries the common 120-v. bulb. The usual result is an explosion.

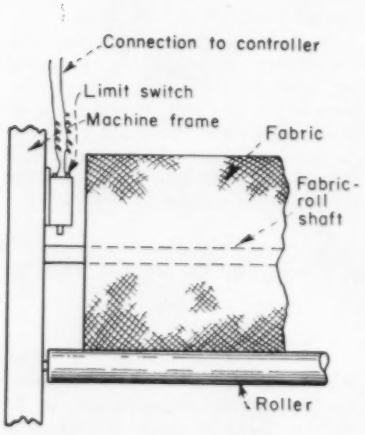
We eliminated this difficulty by making a simple change from the ordinary testing procedure. Instead of touching each terminal with the fuse, we touch one with a fuse and the other with the side of the fuse box. This action grounds the bulb to the transformer and cuts the voltage in half. Using 120-v. bulbs for such tests is more practical than stocking 220-v. bulbs for testing fuses. (K-2878)

Charles S. Bicksler, Lancaster, Pa.

Winner of TW 1955 Kink Prize

LEO A. BOUVIER, of Pawtucket, R. I., has received $500 as the 1955 annual prize in TW's Kink Contest. His winning Kink, "Foam Rubber Strips Prevent Creases in Cloth," appeared in the May, 1955, issue of TW.

Mr. Bouvier recently retired after serving for 36 years as general overseer of mills in the Pawtucket area. He plans to remain active as a consultant in the textile field.

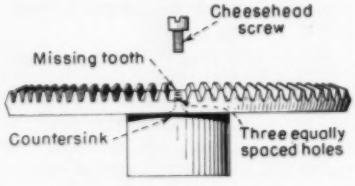


Limit Switch Controls Fabric-Roll Sizes

Several devices have been described in TEXTILE WORLD recently that are useful in controlling the size of fabric rolls. Here is a simple way to control the size of rolls from textile machines.

Screw a limit switch to the machine frame above the roller that turns the fabric. The distance from the hole to the roller depends on how large you want your cloth roll to be. Several holes can be drilled for various sizes of roll.

Connect the limit switch to the machine stop-motion circuit. When the fabric-roll shaft touches the limit switch, the machine will automatically stop. (K-2401)



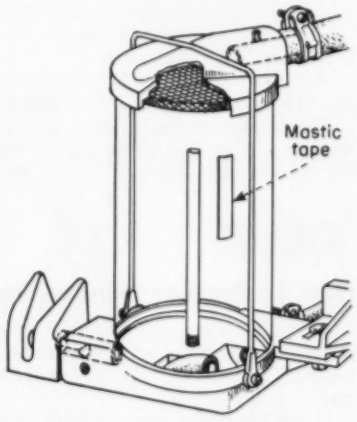
Stop-Motion Gears Are Easily Repaired

The top bevel gear of the measuring-wheel stop motion on a knitting machine in our plant broke a tooth and locked solid. We urgently needed the machine for production; so I made a temporary repair that proved very successful.

The stop-motion unit was dismantled and the damaged gear removed. The broken tooth was filed down to the base, and three holes were drilled at equal distances from each other in the vacant section.

Threads were tapped into these holes, and the underside of the holes was countersunk. Brass cheese-head screws were tightened in the tapped holes, and the protruding ends were hammered into the countersunk section. The screw heads were then filed to the contour of the teeth.

The job took less than 1 hr. and cost only a few cents. The machine is still running smoothly three months after the repair. (K-2823) *Wm. Scott, Enfield, England*



Repair Vacuum Cylinders On S-6 Looms Easily

When the vacuum cylinder on a Crompton & Knowles S-5 or S-6 loom is cracked, a temporary repair can be made with mastic tape. A short length of tape over the crack seals the leak securely. Then the loom can be run without danger of jerk-backs or misthreaded shuttles until a new cylinder can be secured from the stock room.

The mastic tape can also be used to seal cracks around the top or bottom edges of the cylinder that permit air passage. Just wind the tape completely around the cylinder and let the edges lap over a little. (K-2843) *Gene Reichley, Berwick, Pa.*

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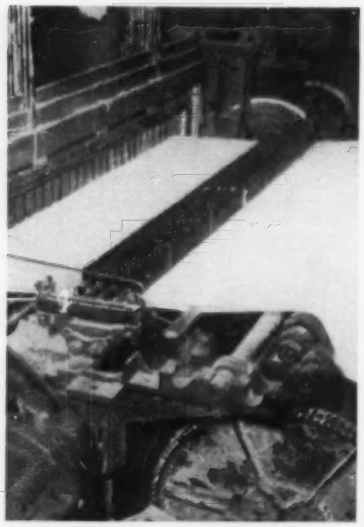


Correct Defective Warps With a Lease Stick

We occasionally have a warp in a loom with ends stuck together. The warps may be defective for several reasons, such as hard size from the slasher or crossed ends from a breakout back of the drop wires at the loom.

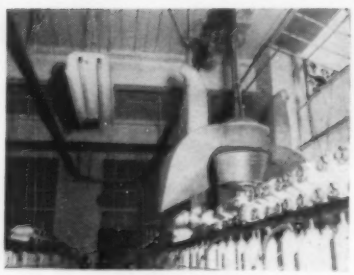
If the defective warp is near the end of the yarn beam, we put a temporary lease stick in the warp to correct the trouble. The lease stick is the common oval-shaped stick used to lease warps for tying in. The shed is divided equally, and the warp is leased out. Then the lease stick is inserted in the leased warp.

We cut an old top harness wire (leader wire) used with dobby motions and use it to make the lease stick move. A short section of harness wire is hooked through one end of the lease stick and fastened to the stop-motion sliding feeler-bar adjusting stud on the left-hand end of the loom.

A longer section of harness wire is hooked in the other end of the lease stick. The wire is bent up to clear the drop wires and is connected to the wing nut on the handrail bolt.

As the loom lay moves back and forth, the lease stick moves in the warp back of the drop wires on the right-hand side of the loom. The lease stick pivots from the wire that secures it to the left-hand side of the loom.

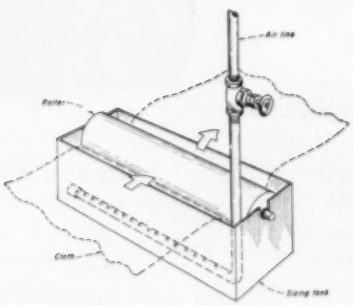
The moving lease stick breaks up draw-backs before they form. When the defective warp runs out, we discard the lease stick. (K-2703)



Homemade Ceiling and Light-Fixture Cleaner

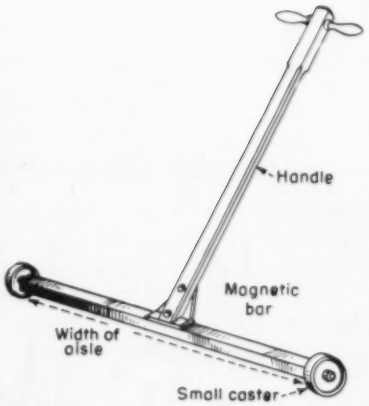
It used to be quite a job to clean the lint off the light fixtures and ceilings in our mill. The use of long-handle brushes and stepladders between the spinning frames was a hazard.

We solved this problem by building two air outlets (we call them "goose ears") on the top of our overhead cleaner. The nozzles blow down the lights as the cleaner goes past. At the same time, an old electric fan attached to the upper part of the cleaner blows down the ceiling most satisfactorily. (K-2793) *Linn Mills Co., Corriher, N. C.*



How To Keep Sizing Well Mixed

Sizing mixtures that contain suspended material often tend to separate in the size box. To overcome any tendency of our mixes to separate, we agitate the mixture by means of compressed air. A perforated pipe, mounted near the bottom of the size box, supplies air from the plant system. The operator controls the amount of air necessary for any particular mix by means of the valve shown in the sketch. (K-2811)



Keep Needles off the Floor

Needles from our spring-needle knitting machines were a menace in the knitting room when they fell on the floor and were picked up in the cloth. One needle could ruin 60 yds. of cloth when the cloth was scoured.

We now keep our knitting-room floor clear of needles with a homemade magnetic sweeper that is pushed on small casters down the alleys where the cloth may pick up needles.

The width of the magnetic bar is equal to the distance between the alleys. The rod is raised only a fraction of an inch from the floor and is pushed with a handle like that on a lawn mower. (K-2864)

Spare Box Motions Reduce Loom Downtime

We formerly repaired the box motions on our Crompton & Knowles C-4 looms only when they broke down. It usually took from 2 to 4 hrs. to rebuild a box motion; and the loom was stopped all this time. Consequently, we lost a lot of loom production.

We cut down on this loss of time by building extra box motions. Our maintenance men build up several box motions at once. We always have three or four box motions ready to go on the looms as they break down.

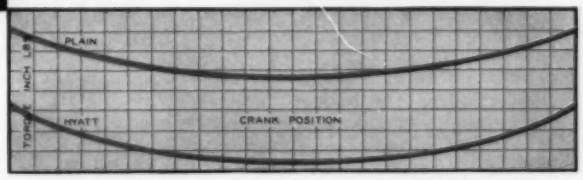
With this new method, the loom stands only 45 mins. to 1 hr. because the only lost time is in removing the old box motion and putting on a new one. Therefore, our weave-room efficiency has been increased. (K-2877)

TESTED WAYS TO ASSURE MORE PROFITABLE TEXTILE PRODUCTION

ONE OF A SERIES

HYATT ROLLER BEARINGS SAVE FROM 5% TO 40% ON POWER

(Above) A standard dial-indicating torque wrench, attached to loom crankshaft, records effort in inch-pounds required to turn loom over.

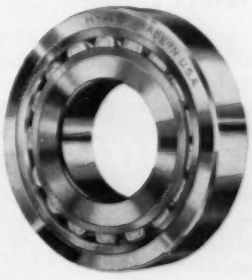


(Right) Chart plots torque readings taken every 30 degrees throughout complete revolution of Hyatt-equipped C & K Model S-6 loom, compared to identical loom with plain bearings.

When HYATT Roller Bearings are installed, the reduction in effort required to turn over looms by hand runs as high as *fifty percent*, as shown in the above chart. In exhaustive tests on two groups of identical looms weaving the same cloth construction, those equipped with 11 HYATT Roller Bearings required only *one-half as much effort* to turn over by hand as the looms with plain bearings. This means less fatigue for the weaver, less hazard of hernia, and quicker completion of the pick-out operation. Women weavers particularly appreciate, and work more efficiently on, roller bearing looms.

However, substantial power savings can be obtained only by fitting a large percentage of the bearing positions in a given machine with roller bearings. This usually permits the use of smaller motors; or, if motor size remains the same, speed may often be stepped up to increase production.

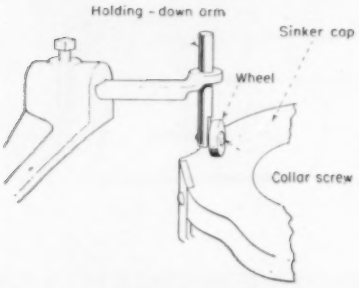
Be sure to specify roller bearings by HYATT—*the pioneer in their application to the textile industry*—when you modernize or replace *any* of your machines. HYATT, America's *first* and *foremost* maker of roller bearings, leads the field in textile bearing know-how. For further details on the profitable application of HYATTS to textile machinery, request Bulletin T-54 from Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



NO TEXTILE MACHINE IS BETTER THAN ITS BEARINGS!

HYATT ROLLER BEARINGS

STRAIGHT BARREL TAPER



Sinker-Cap Wheel Stops Hosiery-Machine Jams

The sinker caps on our circular hosiery machines occasionally used to become jammed during heel and toe knitting. The sinker cap was not free to oscillate with the sinkers, and faulty fabric resulted. The trouble was generally found to be the holding-down arm binding on top of the sinker cap.

We don't get any more of this trouble since we attached a small ball-bearing wheel to the lower part of the holding-down arm. A 1-in. section on the lower part of the arm was filed flat, and a hole was drilled and tapped in the center of the flat portion.

A collar screw locks the wheel in position on the holding-down arm, and the wheel revolves freely on the arm. When the arm is replaced on the machine, the wheel revolves on the sinker cap to hold it in place and yet allows the cap to turn freely. A spot of oil is put on the wheel occasionally.

The job takes only a few minutes, and we've had no trouble with jammed sinker caps since we installed these wheels. (K-2894) *Coy Martin, Belmont, N. C.*

Rubber Hose and Graphite Protect Exposed Cables

A good way to protect exposed cables from heat and mechanical damage is to put the cable into a length of rubber hose and pack the space between the cable and the rubber with flake graphite. The graphite, being heat resistant, will protect the cable from heat; its resilience and lubricating properties will prevent mechanical damage. (K-2832) *W. E. Warner, Essex, England*

Best-Kink Award for January

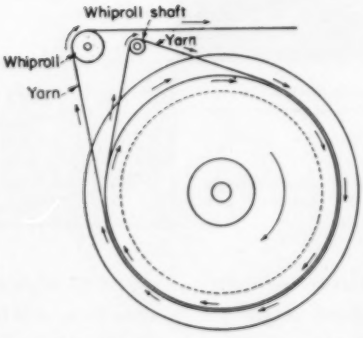
Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best kink for January, according to TEXTILE WORLD reader-judges, was:

"Vibrating Screens Remove Lint"
By V. D. Parrot, Dalton, Ga.

Mr. Parrot is being sent a check for $25 with the compliments of TEXTILE WORLD.



Special Warp Arrangement Stops Slippage on Looms

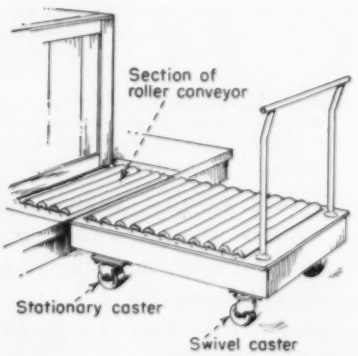
On sharkskin weaves and other heavy styles of cloth, we used to have trouble with the warp yarn slipping on the barrels of the yarn beams.

To correct this trouble, we found a new way of threading the warp yarn from the yarn beam to the whiproll. We formerly pulled the yarn straight from the yarn beam and ran it directly over the whiproll. Now we:

1. Pull a sheet of yarn from the yarn beam.
2. Thread the sheet of yarn over the whiproll shaft.
3. Rewind the sheet of yarn around the yarn beam.
4. Run the yarn over the whiproll to the drop wires.

This yarn-threading arrangement stops all slipping of yarn at the barrel of the yarn beam.

The method also has other advantages. For example, sharkskin warps of filament-synthetic fibers in the range of 300 den. often absorb too much size in slashing. These warps make alternate small thick and thin places widthways in the cloth at the loom. The cracking is stopped by threading the warp yarn at the loom the new way. (K-2638)



Conveyor-Dolly Cuts Handling Costs 50%

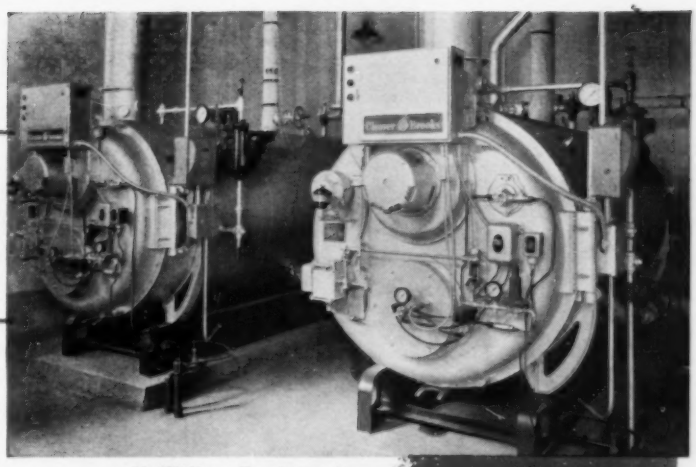
In our woolen mill, we handle heavy cases of yarn that weigh as much as 500 lbs. each. It was a real problem to transport these cases from the yarn-storage room to the knitting room. Using regular trucks, two workers were required to load and unload the cases.

We devised a combination conveyor-dolly, as illustrated, that can be pushed against the end of the stationary conveyor and lined up with the rollers.

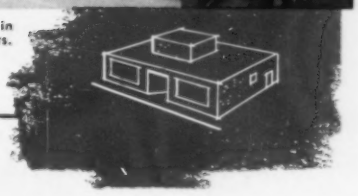
The arrangement permits yarn cases to be easily pushed by one man from the conveyor onto the dolly with no manual lifting. The cases are just as easily rolled off the dolly in the knitting room.

Now, one man does all the loading, unloading, and transporting of our heavy yarn cases. Our labor costs for yarn handling were reduced 50%. (K-2850)

18 sizes
110 models
15 to 600 hp

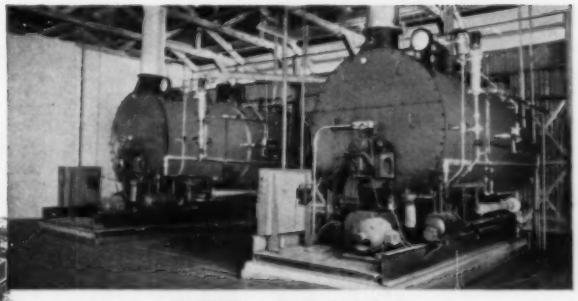


CB SERIES — The ultimate in compact, quiet-running boilers. Sizes: 15 to 150 hp.

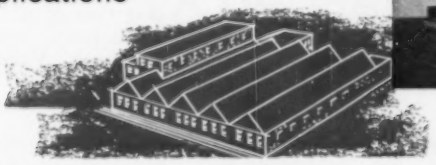


yours from Cleaver-Brooks

the broadest line of cost-saving "packaged" boilers—for hundreds of applications



LR SERIES — Standard of the industry for hot water or steam service, for heating or processing. Sizes: 200 to 600 hp.



THE two installations above are representative of Cleaver-Brooks' broad range of standard models. The wide choice makes planning and selection of a boiler for your specific needs — large or small — a simple, time-saving procedure.

Your nearby Cleaver-Brooks representative, with years of specialized boiler experience, can be of real service to you. Working with you and your engineers, he can help you to find ready answers to questions of size, loads, present and future steam or hot water needs, space and equipment arrangement. Where local conditions dictate, oil, gas or combination oil/gas firing can be selected for greatest savings. And once installation is completed, arrangements are made for factory-supervised starting and training your operator.

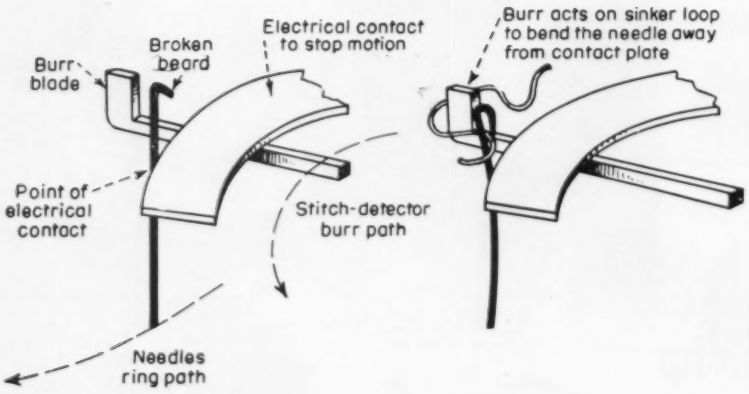
Keep in mind, too, the many fuel and maintenance-saving advantages of four-pass design with forced draft . . . the standard equipment electronic combustion controls which assure continuous, safe operation.

Cleaver-Brooks boiler owners enjoy all these advantages and share in the combined application engineering experience of more than 19,000 individual boiler installations. Put this experience to work for you. Cleaver-Brooks Company, Dept. C, 360 E. Keefe Ave., Milwaukee 12, Wis., U.S.A., Cable Address: CEEBEEWEST — all codes.

See the classified pages of your phone directory for name of nearest representative. Send us your name to receive regular issues of the new Cleaver-Brooks Bulletin, or write for newest literature.

Cleaver Brooks®

TWENTY-FIVE YEARS OF LEADERSHIP
BY THE ORIGINATORS OF THE SELF-CONTAINED BOILER

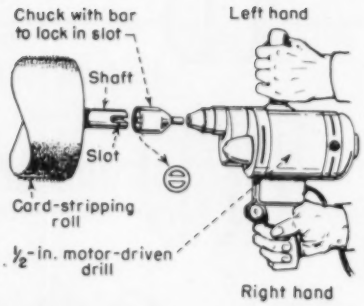

Burr blade
Broken beard
Electrical contact to stop motion
Burr acts on sinker loop to bend the needle away from contact plate
Point of electrical contact
Stitch-detector burr path
Needles ring path

Spring-Needle Fabric Has No Long Drop Stitches

Drop stitches caused by broken needle beards and wiry yarn are the source of many faults in spring-needle fabrics. An electric stop motion can be built that will detect broken beards and drop stitches.

The basic unit is an extra burr wheel fitted between two sets of burrs. The burr blades act on the sinker loops between the needles. This action slightly bends the needles away from the true needle circle and away from a brass insulated plate fixed over the burr wheel.

If the needle beard is broken, or if there is no stitch on the needle, the needle remains in its vertical position, where it will contact the brass plate. The brass plate is wired to the stop-motion circuit, and the circuit will be completed through the needle to the stop-motion controller to stop the machine. (K-2860) *L. Prelog, Sydney, Australia*



Strip Cards With Electric Hand Drill

We have developed an easy and fast method of stripping cards in our mill. Instead of fooling with the old belt-drive system, we are now turning the stripping roll with a hand drill, modified as illustrated.

Any kind of a power-driven hand tool with a sturdy drive shaft can be used. We find a unit with a slow motor to be preferable.

The drill was equipped with a special chuck into which a cross bar is welded securely. The pulleys were removed from the stripping-roll shaft, and a slot was cut in the shaft to fit the chuck on the drill.

Use of this device has cut the stripping time of two men 50%, and the job is much easier. (K-2829) *S. M. Cauble, Jr., Valdese, N. C.*

$500 for Best Kink in 1956 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- **Cut costs**
- **Improve quality**
- **Reduce work**
- **Increase production**
- **Make work easier**

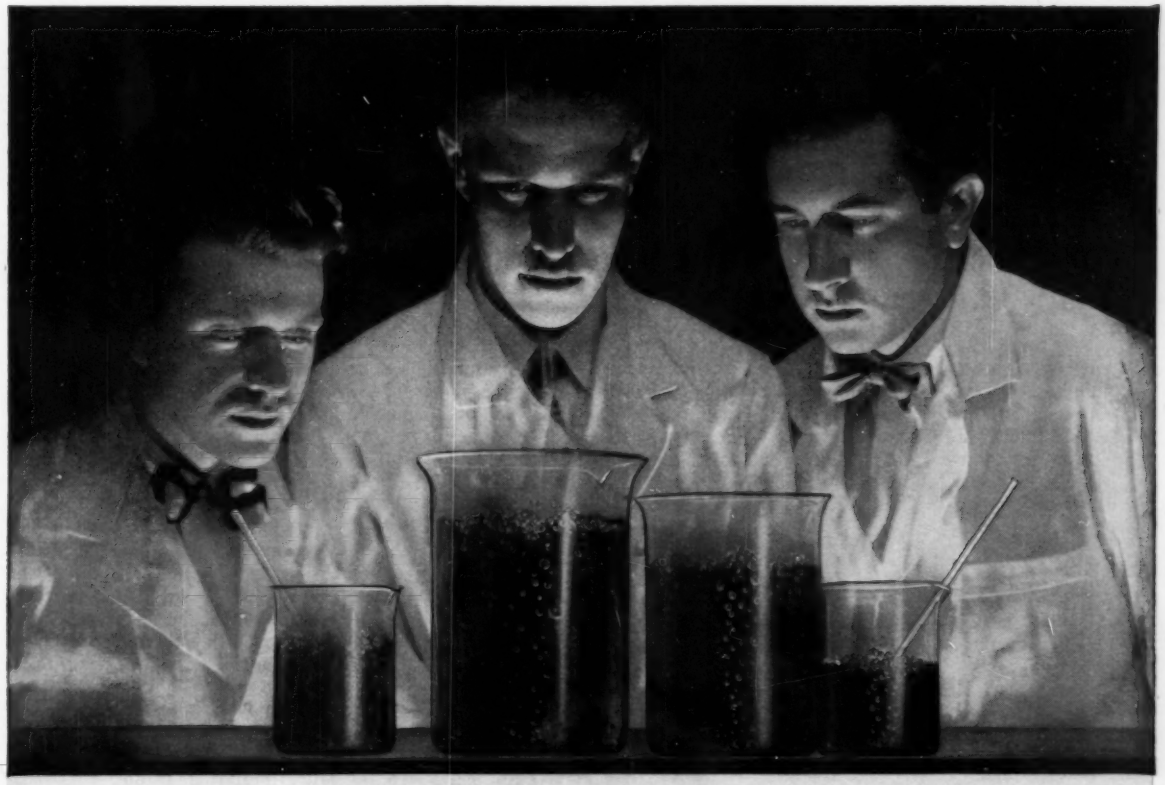
The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.



Where too many "cooks" DON'T spoil the broth!

Good "cooking" makes for good cellulose. Here at Buckeye, giant 60-ton digesters give our raw materials just as fine a "cook" as man can devise!

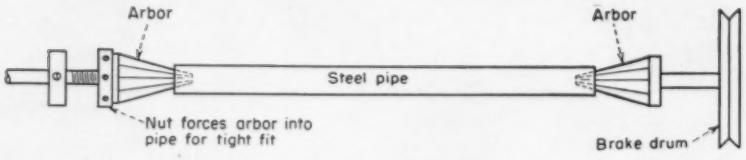
But . . . while each "cook" is in progress, samples are continuously being checked and tested in our laboratories. The result? Exacting down-the-line production control to guarantee you a Buckeye product *precisely* suited to your need.

This is one of 27 controls used by Industry's first producer of cellulose . . . a process that combines care with imagination in the making of *both* cotton linters and high alpha wood cellulose.

Two great plants . . . at Memphis, Tenn. and Foley, Fla. . . . offer the finest facilities for production, research, and customer service.

If you have a cellulose problem, why not write to Buckeye? You'll find our staff of technicians easy to talk to . . . and, better still, quick with the answers! Please address inquiries to: Buckeye Cellulose Corporation, Dept. 6-2A1, P.O. Box 6746, Memphis 8, Tenn.

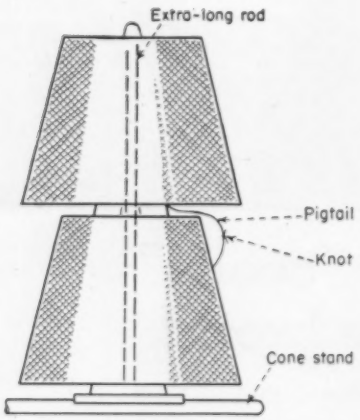
BUCKEYE ...first in cellulose



Steel Cores Improve Fabric Splitting

When fabric is wound on cardboard cores preparatory to being split into ribbon, the arbors used to support the core ends frequently expand the cardboard so that only a loose and unsatisfactory bearing results. Let-off tension becomes irregular, and even splitting is impossible.

By winding the fabric on steel pipe of the same outside and inside diameters as the cardboard tube, a perfect center is provided that will stand the pressure of the arbors and permit the let-off brake to work as it should to keep the cloth taut ahead. (K-2905)
R. B. Hoar, Wilmington, N. C.



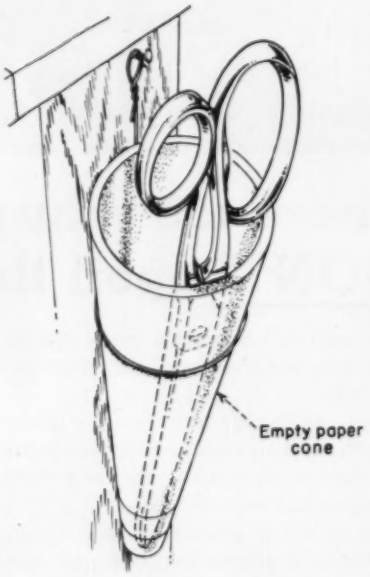
Improve Efficiency on Revolving-Head Knitters

Timestudies in our knitting department showed that machine downtime caused by changing yarn cones on revolving-head knitting machines was far greater than it was on revolving-cylinder machines where we used the pig-tail system of tying yarn.

To solve the problem of putting one cone above the other without the top cone falling when the machine runs at top speed, we changed the cone-holder rod to one twice the length.

The first cone is pushed down to the bottom of the rod so that the extra-length cone-holder rod protrudes from the top of the cone. The second cone is then placed on the lower cone, and the pigtail end of the top cone is tied to the yarn from the outside of the bottom cone. (K-2853)

[Roto-Tie devices are made especially for this job. How one mill uses these devices is described in TW, April, '55, p. 124—EDITOR]



Cone Containers Reduce Small-Tool Losses

Small tools used to be a problem in our mill; they were always getting misplaced.

We found that paper cones hung on the walls and machines in strategic places make an excellent receptacle for items such as scissors, screwdrivers, pliers, pencils, and chalk.

These containers have reduced our losses substantially since the operators were required to keep their tools in the cones. Also, considerable time is saved that used to be wasted in looking for missing tools. (K-2848)
Hokao, Fukaya, Japan

Notebook Is a Good Tool To Make Loomfixing Easy

A notebook is one of the handiest tools a loomfixer can own. You should keep the notebook in your toolbox and carry a sheet of scratch paper in your pocket. Any time you see something new or unusual on your section of looms, make a brief note on the scratch paper. Then the first time you get time when your hands are clean, write the report of the unusual condition in the notebook.

The notebook idea has helped me for many years. I used the idea first when I had a section of looms containing six different kinds of looms. There were 2x1, 4x1, and 4x4 looms of various widths, beam brackets, take-up motions, etc. To add to the confusion, the looms had been overhauled so much no two were alike.

The second day on the job, I began writing down notes on each loom worked on. I listed information such as "Loom 421: short shuttle boxes; has multiplier with parts missing; being run as 1x1 loom; etc."

Later I started listing work that should be done on each loom when the warp ran out. Pretty soon the job was running, and I was walking around looking for something to do.

Modern looms inspected by checklists are in much better physical condition than older looms, but a notebook can still be used to save wear and tear on a fixer's mind. (K-2569)
Charles S. Bicksler, Lancaster, Pa.

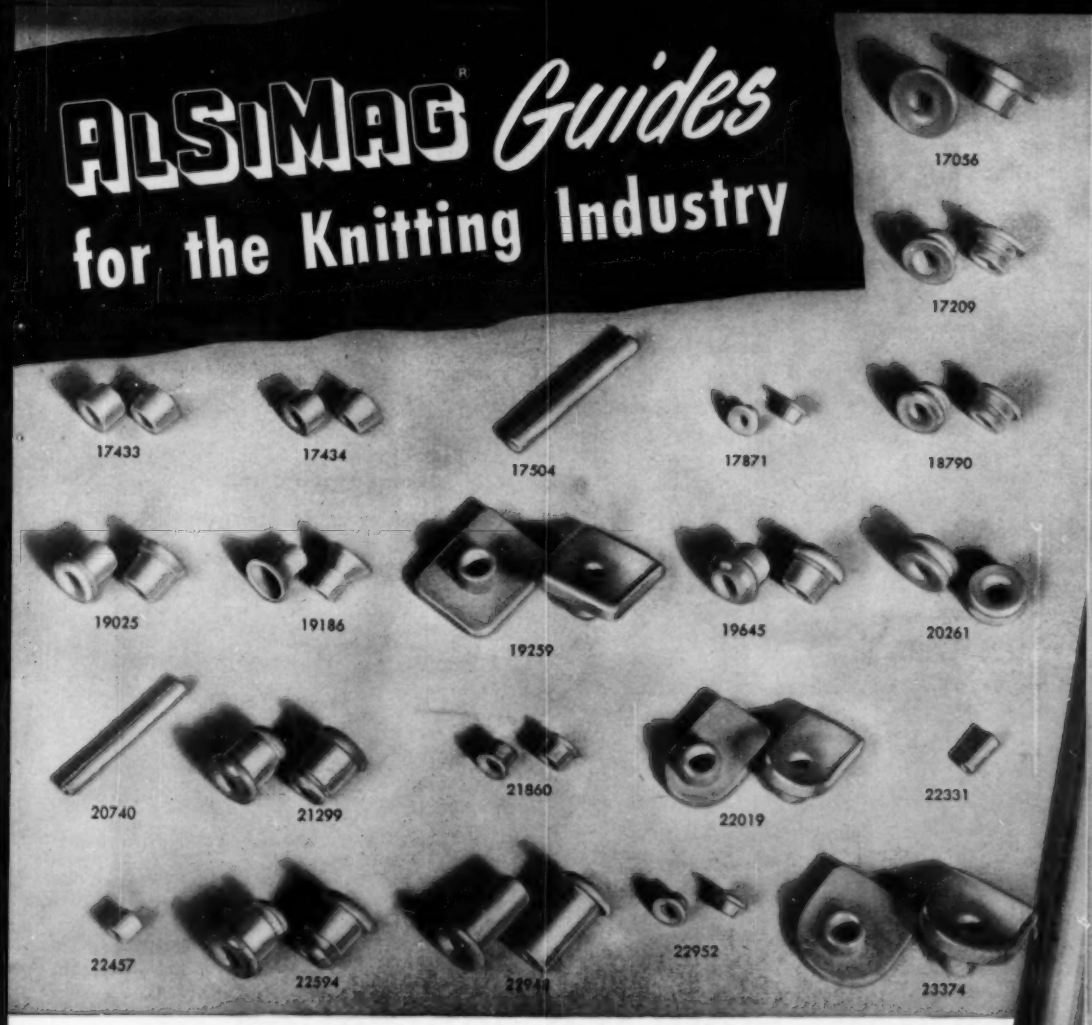
How To Waterproof Concrete Walls

Damp cotton began to bother a Southern mill after the opening room was enlarged. Moisture condensed on one of the outside concrete walls in the new area. Condensation was so great that the new area was a total loss.

The master mechanic solved the problem by cleaning the wall and treating it with a solution of 8¼ lbs. of zinc sulfate dissolved in 1 gal. of water.

After the mixture combined with the calcium in the cement and hardened, the mill had no more trouble with damp walls and cotton. (K-2882)
Mal Bowden, Thomaston, Ga.

ALSIMAG® Guides for the Knitting Industry



USES

- Yarn Box Eyelets
- Trough Eyelets
- Snapper Eyelets—Tapered, Shouldered, Plate, Grooved
- Oil Cup Eyelets
- Stop Motion Eyelets and Inserts
- Carrier Tubes
- Trough Rods
- Tension Rods
- Tension Rings
- Drop Wire Rings
- Miscellaneous Guides for Special Purposes; for example: inserts for fixtures on Trough Floats

ADVANTAGES

1. *Quality*. Smooth, homogeneous material of great hardness. Uniform physically and dimensionally.
2. *Long Life*. Test these guides on finer denier synthetic yarns at high speed and high tensions. In every case reported to us, AlSiMag guides have shown a material improvement over any former guides used.
3. *Fewer Replacements*.
4. *Uniformity* of guides makes for uniform high quality in finished products.
5. *Lighter Tensions*. AlSiMag guides are available in controlled finishes.
6. *Electrically Conductive* guides (AlSiMag 193) are available to aid in the control of static.

TEST SAMPLES SENT ON REQUEST.

AlSiMag No. 22615
WEIGHT: 0.60 Grams
I.D.: 0.0935"
THICKNESS: 0.046"

AlSiMag No. 17805
WEIGHT: 0.450 Grams
I.D.: 0.438"
THICKNESS: 0.084"

AlSiMag No. 19185
WEIGHT: 0.212 Grams
I.D.: 0.385"
THICKNESS: 0.048"

AlSiMag No. 20041
WEIGHT: 0.306 Grams
I.D.: 0.469"
THICKNESS: 0.050"

AlSiMag No. 20776-A
WEIGHT: 0.229 Grams
I.D.: 0.437"
THICKNESS: 0.050"

AlSiMag No. 20776-B
WEIGHT: 0.166 Grams
I.D.: 0.437"
THICKNESS: 0.033"

AlSiMag No. 21088-A
WEIGHT: 0.322 Grams
I.D.: 0.482"
THICKNESS: 0.050"

AlSiMag No. 21088-B
WEIGHT: 0.180 Grams
I.D.: 0.482"
THICKNESS: 0.028"

AlSiMag No. 21501
WEIGHT: 0.408 Grams
I.D.: 0.625"
THICKNESS: 0.062"

54TH YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE
A Subsidiary of
Minnesota Mining and Manufacturing Company

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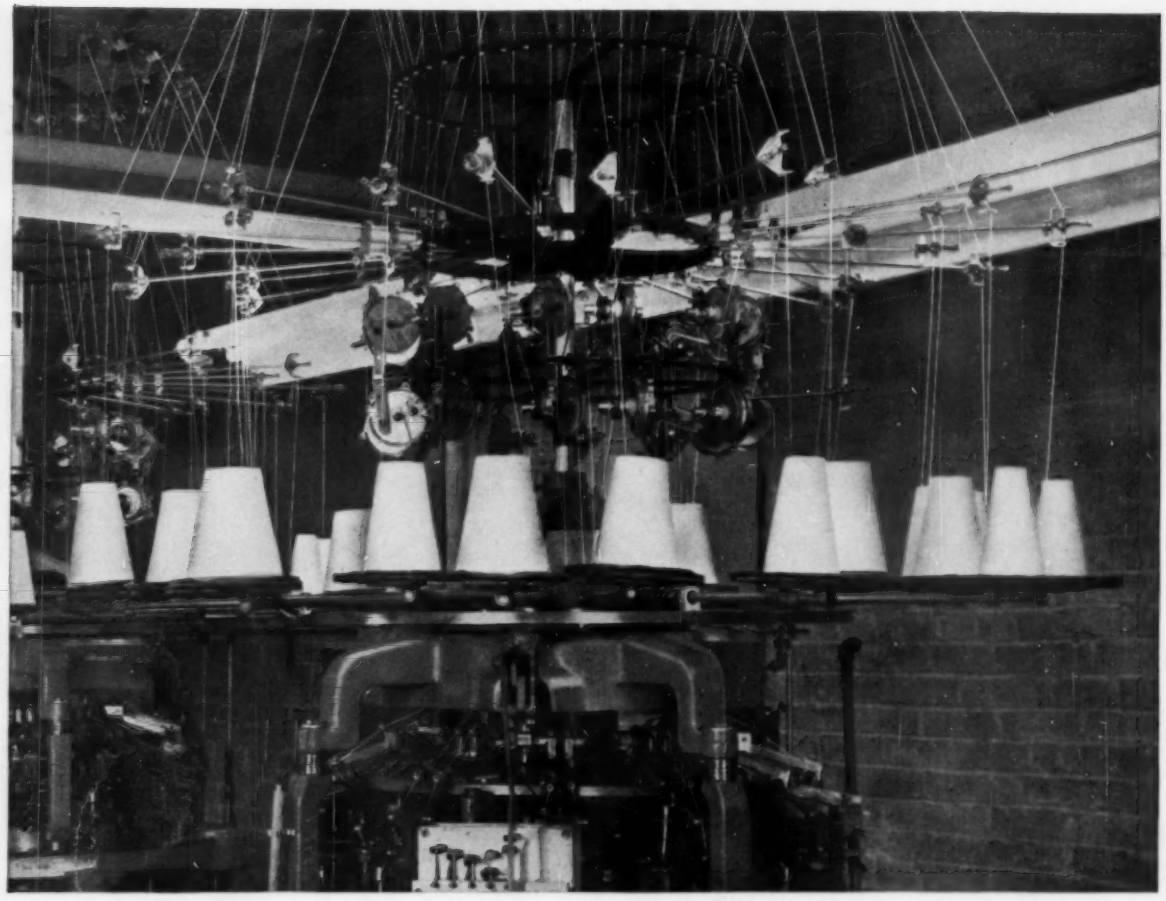


Yarn Tension: How it's controlled at the Havsy Knitted Sportswear Corp.!

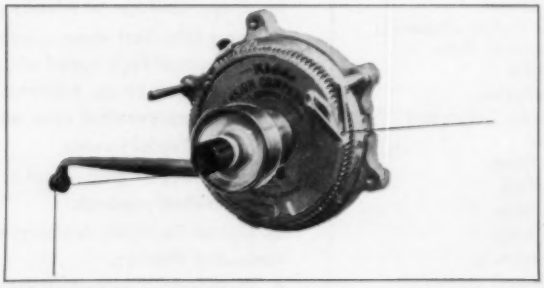
Tension problems, long the stumbling-block of the knitting industry, have met their match at the Havsy Knitted Sportswear Corporation!

The Havsy Corporation of Brooklyn, New York, manufacturers of sweaters of textured nylon yarn, recently installed Kidde Standard Compensators on their 12-feed, 16-cut T.A.I. Jacquard knitting machines. Since that time, Mr. Lawrence Havsy, owner of the company, reports the following improvements:

1. *Elimination of Barre effect due to uneven tension.*
2. *Elimination of frequent stitch cam adjustment.*
3. *Reduced "down-time" caused by frequent stitch cam adjustment.*

Mr. Havsy also reports that Kidde compensators completely overcome the tension problems inherent to production with textured nylon yarn and facilitate the knitting of quality garments.

Kidde's three tension compensators are used by more than 500 of the nation's leading textile mills to help them turn out a better product at less cost. You can do the same. For more information, write Kidde today!



Kidde Standard Compensator

Available in three tensions: 2 to 50 grams, 10 to 120 grams and 50 to 300 grams.

Kidde (K Kidde)

The word 'Kidde' and the Kidde seal are trademarks of Walter Kidde & Company, Inc.

Walter Kidde & Company, Inc., 391 Main St., Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal—Toronto

CHEMICAL USERS' GUIDE To General Chemical Products for the Textile Industry

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTH (MIN.)	SHIPPING CONTAINERS	APPLICATIONS
Glauber's Salt, Crystal $Na_2SO_4 \cdot 10H_2O$	Colorless Crystals	96% $Na_2SO_4 \cdot 10H_2O$ 42.3% Na_2SO_4	Bags Fibre Drums	Dyeing assistant.
Glauber's Salt, Anhydrous Na_2SO_4	White Granules	99.9% Na_2SO_4	Bags Fibre Drums	Dyeing assistant.
Sulfuric Acid H_2SO_4	Liquid	66° Be 93.19% H_2SO_4	Carboys Steel Drums Tank Trucks Tank Cars	Carbonizing wool; dyeing; desizing cotton; souring; rayon spinning bath.
Acetic Acid CH_3COOH + water	Colorless Liquid	Various	Carboys Barrels Tank Cars Drums	Dye bath; souring agent; imparting scroop to cotton and silk.
Aqua Ammonia NH_4OH + water *(Ammonia)*	Colorless Liquid	26° Be 29.4% NH_3	Carboys Steel Drums	Wool scouring; dyeing.
Hydrochloric Acid HCl + water *(Muriatic Acid)*	Liquid	18° Be (27.92%) 20° Be (31.45%) 22° Be (35.21%)	Carboys Tank Cars Tank Trucks	Souring; removing hypochlorite bleach; dyeing.
Tetrasodium Pyrophosphate, Anhydrous $Na_4P_2O_7$ *(TSPP) (Pyro)*	White Powder	98% $Na_4P_2O_7$ (Equiv. 52% P_2O_5)	Fibre Drums Bags	Stabilizing peroxide bleaches; water treatment and dispersing agent; detergent.
Sodium Tripolyphosphate $Na_5P_3O_{10}$ *(Tripoly)*	White Powder	90-95% $Na_5P_3O_{10}$ (Total P_2O_5—56%)	Bags	Water treatment and dispersing agent; detergent.
Sodium Metasilicate $Na_2SiO_3 \cdot 5H_2O$	White Granules	29.0% Na_2O	Bags Fibre Drums	Kier boiling as detergent.
Sodium Sulfite, Anhydrous Na_2SO_3 *(Sulfite)*	White Powder	98.5% Na_2SO_3	Bags Fibre Drums	Rayon manufacturing
Sodium Bisulfite, Anhydrous $Na_2S_2O_5$ *(ABS) (Sodium Metabisulfite)*	White Powder	97.5% $Na_2S_2O_5$ (Equiv. 65.5% SO_2)	Bags Fibre Drums	Bleaching wool; anti-chlor after bleaching with hypochlorite; rayon manufacturing.
Oxalic Acid $C_2H_2O_4 \cdot 2H_2O$	Colorless Crystals	99.5% $C_2H_2O_4 \cdot 2H_2O$	Bags Fibre Drums	Bleaching; dyeing for mordanting wool with chrome.
Sodium Silicate $Na_2O \cdot X(SiO_2)$ + water	Viscous Liquid	38° to 52° Be Various ratios of $Na_2O:SiO_2$	Steel Drums Tank Trucks Tank Cars	Stabilizing peroxide bleaches.
Aluminum Chloride, Solution $AlCl_3$ + water	Liquid	32° Be 50% $AlCl_3 \cdot 6H_2O$	Carboys Tank Cars	Carbonizing wool.

The products advertised are commercial chemicals having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.

OTHER PRODUCTS: Disodium Phosphate; Nitre Cake; Trisodium Phosphate; Sodium Hyposulfite; Aluminum Sulfate; Lead Acetate; Mixed Acid; Epsom Salt; Chrome Alum; Ammonia Alum; Potash Alum; Ammonium Sulfate; Ferric Sulfate (Iron Copperas Nitrate); Ferric Nitrate (Iron True Nitrate).

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ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

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In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

RUBBER LOOM NECESSITIES

Manufactured by

JACOBS

Jake Jacobs says—
"Years of mill-wise experience is reflected in this growing line of rubber loom equipment. Each product has been tried and proven in use!"
JACOBS

"Verybest"

RUBBERWELD LUG STRAPS

Molded as one piece. Guaranteed more uniform than any other Lug Strap on the market. Available both with and without plug.

RUBBERIZED FABRIC SWEEPSTICKS

Molded rubber combined with fabric. Uniform consistency assures maximum strength and length of life.

ROLL COVERING

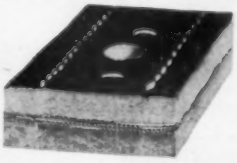
Available in many styles including: Smooth Surface; Natural Gum Rubber Covering, recommended for fine goods; Pyramid design; and others. Each style has the finest gripping surface for its specific task.

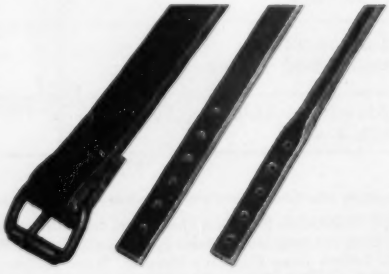
TUBULAR SPINDLE BUMPER

NAG BUNTER

"W" BUNTER for W-2 and W-3 Looms.

2½-ply or 3-ply Leather Straps or Strapping with center ply of Rubberized Fabric.





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Charlotte, N. C.

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Outstanding NEW LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for March are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Argyle sock knitter—Produces 3 doz. pairs per shift from a variety of yarns in up to eight colors of overplaids. Hemphill Co. **(F-1)**

Large-package twisting frame—For hand-knitting and carpet yarns; 120 spindles, self-lubricating rings, traverse up to 9½ ins. Prince-Smith & Stells Ltd. **(F-2)**

Pin drafters—For worsted drawing, simplified handling of top. Warner & Swasey. **(F-3)**

Ring doubling frame—For cotton, synthetics, worsted yarns. Headstock contains all driving elements. Compact design. Spindle Sales Corp. **(F-4)**

Automatic knitting machine—For Argyle socks. Solid-color patterned areas in up to six colors. H. E. Crawford Co., Inc. **(F-5)**

AUXILIARY EQUIPMENT

Heat-exchanger and condenser tubes—For general industrial use. Bulletin TB-329B covers specifications of several types of tubes. Babcock & Wilcox. **(F-6)**

Glass pipe and fittings—For corrosive liquids, dyes; toughened to withstand thermal shock. Corning Glass Works. **(F-7)**

Infrared heaters—Far-infrared-ray equipment for many purposes, described in Bulletin 57. E. L. Wiegand Co. **(F-8)**

Magnetic drums—To remove tramp iron from chemicals, coal, other materials. Bulletin MB-200. Homer Mfg. Co., Inc. **(F-9)**

Sprayed-coil dehumidifiers—Complete data on selection, operating characteristics, construction details of this type of dehumidifier contained in Bulletin 7827 from American Blower Corp. **(F-10)**

Solenoid-operated valves—For on and off control of steam, fluids. Electrical operation. Form 1010. Spence Engineering Co., Inc. **(F-11)**

Flexible hose—For ducting vapors, ventilating enclosed areas. Bulletin 60 describes types, other uses. Flexaust Co. **(F-12)**

Electric heater elements—For immersion in water, other liquids; strip heaters. Pub. EC-53. Cutler-Hammer, Inc. **(F-13)**

Individual drive information—Calculations, recommendations for many drives in information journal No. 1. ACEC Electric Corp. **(F-14)**

Explosionproof switches—In various sizes and types for industrial installations. Micro Switch Div., Minneapolis-Honeywell Regulator Co. **(F-15)**

SUPPLIES & CHEMICALS

Plastics and resins—Over 50 plastics and resins described in 1956 reference file from Bakelite Co. Div. of Union Carbide & Carbon Co. **(F-16)**

Industrial tapes—For masking, package closing, strapping. 25-page brochure from Behr-Manning Div. of Norton Co. **(F-17)**

Silicone products—Many types described in reference guide from Dow Corning Corp. **(F-18)**

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NEW LITERATURE Continued

Floor-finishing products—Laboratory-tested and approved materials listed by Maple Flooring Manufacturers Assn. (F-19)

Water control—Conditioning and testing equipment, chemical-feeding devices. Bulletin GSP-901. Hagan Corp. (F-20)

Surfactants — Quaternary-ammonium nonionic materials catalogued in a booklet from Rohm & Haas. (F-21)

Floor-repair material—For concrete floors. Gives high strength, does not shrink, works well indoors or outdoors. Master Builders Co. (F-22)

ENGINEERING & MAINTENANCE

Thermocouple temperature conversion tables—Read in millivolt equivalents. Other references in Bulletin F7255 from Barber-Colman Co., Wheelco Instruments Div. (F-23)

Ventilating fans—Direct-drive models from 1/20 to 20 hp., 860 to 1,725 rpm. American Blower Corp. (F-24)

Steam traps—For industrial purposes in several types, many sizes. Bulletin 255-A. Sarco Co. (F-25)

Test equipment—For servicing electrical equipment of all kinds, described in Cat. No. R36A from Weston Electrical Instrument Co. (F-26)

Pneumatic regulators—For pressure, vacuum, other purposes. Controls and filters described in Bulletin H-2 from Conoflow Corp. (F-27)

Electric clutches—For power-transmission braking, in a wide field of application. Form WEB 6194. Warner Electric Brake & Clutch Co. (F-28)

Pipe tools—For cutting, threading, pipe. Manual and powered models. Form OR 1055. Beaver Pipe Tools (F-29)

Electric chain hoists—Described in bulletins H-37, H-38, H-39, covering light- and heavy-duty models. P&H Hoist Div. of Harnischfeger Corp. (F-30)

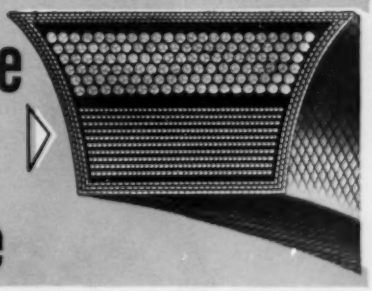
Needle bearings—Engineering and application data in Cat. 55 from Torrington Co. (F-31)

Electrical conduit—For wet, oily, or corrosive installations. Available in sizes from ⅜ in. to 4 ins. Bulletin S-537. American Brass Co., American Metal Hose Div. (F-32)

Centrifugal mixer—For dyes, chemicals, lacquers, in models from ½ to 25 hp. Bulletin RKM-10. Neumann & Weaver, Inc. (F-33)

Boiler controls—For hot water space-heating boilers. Pressure-relief valves, low-water cutoffs, other equipment.

Why this curve lengthens V-belt life



THE CONCAVE SIDES (U.S. Patent 1813698) of every Gates V-Belt are a precisely engineered curve. This curve greatly lengthens V-belt life for this interesting reason:

When you bend a Gates V-Belt, just as it is bent around a sheave, the concave sides (Fig. 1) become straight. Therefore, the belt makes full contact with the sheave, gripping the sides evenly (Fig. 1-A) and wear is distributed uniformly across the sidewalls of the belt. Naturally, uniform wear lengthens belt life; saves on replacement costs and cuts down-time.

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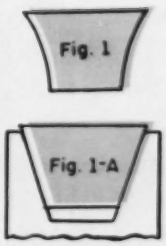
Cut costs by getting longer wear from your V-belt drives. Specify Gates Vulco Rope—the V-belt with concave sides. Your nearby Gates distributor will supply your needs promptly. The Gates Rubber Co.—*World's Largest Maker of V-belts.*



There are Gates Engineering Offices and Distributor Stocks in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

TPA-74

Gates VULCO ROPE Drives

For more information, write direct or use Reader-Service post card.

The question most frequently asked by consumers when buying soft goods. "Will it fade?" is even ahead of "What is it made of?"—"How much does it cost?"—or "Who manufactures it?"

A nation wide survey made by the American Cyanamid Company of over 33,000 buyers and merchandise managers in department and specialty stores reveals this consumer attitude about color stability.

The seriousness of the problem of color failure is disclosed in the returns showing that color fading, running or rubbing off, brings merchandise returns to over 83% of the stores reporting. Among the worst areas are curtains, draperies and upholstery, say 38.64% of store respondents; dresses, 39%; blouses, skirts, sportswear, 31%; knitwear, 27.5%; slip covers, bedspreads, 27%; sport shirts, 23.6%; corduroy products, 20%; pajamas, 18%.

Atlas Fade-Ometers and Launder-Ometers permit accurate and dependable assessment of the degree of color fastness to light, washing and bleeding. Standard methods of test and of reporting results enable the manufacturer to provide guarantees which are recognized and understood by both buyer and seller.

Producers of soft goods who can advertise and sell their product as having a specific colorfastness rating have a price advantage over merchandise marketed without the color stability assurance provided by these Atlas Ometers.

Atlas Launder-Ometer

Atlas Fade-Ometer

ATLAS ELECTRIC DEVICES CO.
4114 N. Ravenswood Ave., Chicago 13, Ill., U. S. A.
Sales representatives in principal cities throughout the world.

NEW LITERATURE Continued

Described in Bulletin P-30 from McDonnell & Miller, Inc. (F-34)

GENERAL

Roller conveyor—For general-purpose transport of packages. Bulletin GP describes types and sizes, installations. Alvey-Ferguson Co. (F-35)

Alphabetical tabulator—Solves complex business problems of many kinds. Punch-card operation. Folder TM-933 gives details. Remington Rand Div. of Sperry Rand Corp. (F-36)

Measurement of vibration—Instrumentation, methods, case histories, in Form 900-A. From General Radio Co. (F-37)

Reach-Fork Truck—For heavy duty. 3,000-lb. capacity. Telescopic and non-telescopic models. Bulletin 841. Raymond Corp. (F-38)

Waste-control service—All the tools for communication, evaluation, and supervision of a program to reduce waste described in brochure from Clarkson Co. (F-39)

Caster file—Condensed reference material on rating, size, types of casters made by Faultless Caster Corp. (F-40)

Truck costs—How to figure industrial truck costs detailed in folder from Elwell-Parker Electric Co. (F-41)

Equipment index—Bulletin 100-D covers catalogs, bulletins, data sheets, other literature, from Instrumentation Magazine. Minneapolis-Honeywell Regulator Co., Industrial Div. (F-42)

Shelving catalog—Covers standard and specially sized shelving, cabinets, auxiliary items, benches, desks. Cat. F188 from Remington Rand Div. of Sperry Rand Corp. (F-43)

Ball-joint catalog—Lists many types of flexible joints for steam and fluid installations. Cat. 215-B. Barco Mfg. Co. (F-44)

Plant sanitation methods—Booklets on cleaning methods, planning, floor maintenance. From National Sanitary Supply Assn., Inc. (F-45)

Storage-equipment catalog—For products in use, warehousing of countless materials. Cat. 702. Frick-Gallagher Mfg. Co. (F-46)

Light conveyors—For small or light articles, garments, packaged goods. Matthews Conveyor Co. (F-47)

Electric pallet truck—For power lifting and transporting. Capacities to 3,000 lbs. Total lift 121 ins. Bulletin 551-2. Barrett-Cravens Co. (F-48)

Burglar alarm—Ultrasonic principle employed in systems described in brochure from Diebold, Inc. (F-49)

Overhead conveyors—For hand or power operation; hoists, cranes, switches, listed in Booklet 2008-L. Cleveland Tramrail Div., Cleveland Crane & Engineering Co. (F-50)

their wrinkle resistance is the same with

RHONITE R-1

Ever see such look-alike dresses? But that's RHONITE R-1 for you . . . cottons, rayons, and blends wink at wrinkles with equal abandon whether it's the first wearing or last. One's a washer veteran, yet both dresses put on their partygoing look with the same quick swipe of an iron. Why are RHONITE R-1 finishes so durable? Perhaps because RHONITE R-1 is a modified urea formaldehyde, a monomeric product of such small molecular size that it penetrates and reacts inside the fibers.

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Yes, Dart Unions fit tighter and last longer because their two bronze seats are precision ground to a true ball joint. You get a drop-tight connection without straining arm, wrench or union. What's more, a Dart uncouples just as easily. Ask your supplier.

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- Extra wide bronze seats resist pitting and corrosion.
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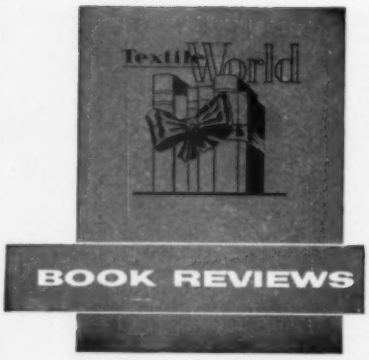


THE NEW SALES PROMOTION IN THE TEXTILE INDUSTRY, by James C. Cumming; Fairchild Publications, Inc., 7 E. 12th St., New York 3, N. Y.; 224 pages, $4.95.

In this completely revised edition of his book, the author has brought the original text up to date by thoroughly rewriting a considerable portion of the book and expanding its contents.

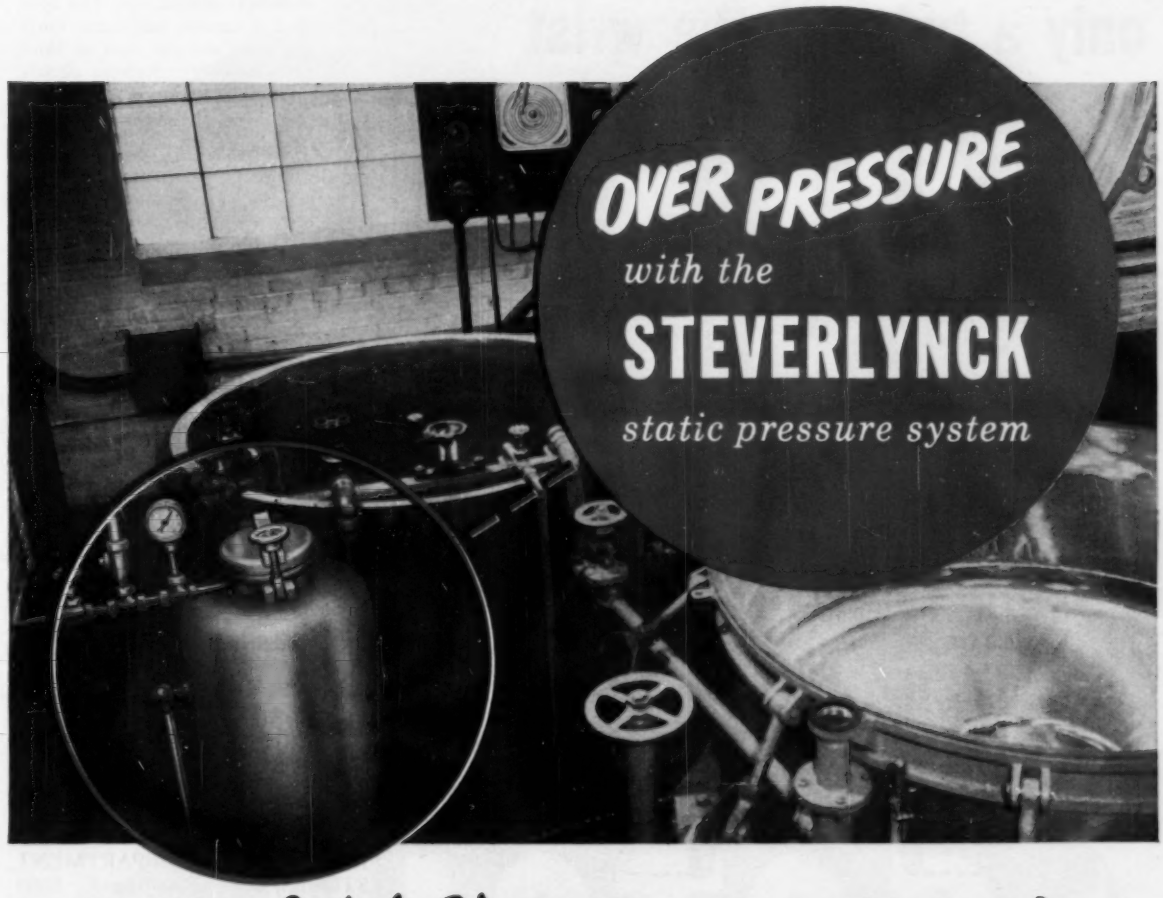
He analyzes the promotional techniques used by leading advertisers in different segments of the textile industry. Special recognition has been given the advances made with new fibers and finishes. He also discusses the growing importance of television as a textile promotion medium.

TEXTILES: ACCELERATED WEATHERING VERSUS OUTDOOR EXPOSURE TESTS, Report PB 111761; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; 49 pages, $1.25.

Comparative effects of outdoor exposure and accelerated ageing on cotton; rayon, nylon, and other synthetics; plastic materials; and coated fabrics are described in this report. Findings of both types of tests were generally in agreement. Certain fabrics, however, gave results after outdoor exposure that were not predicted by accelerated ageing.

F. B. I. REGISTER OF BRITISH MANUFACTURERS–1956, by Kelly's Directories Limited, and Iliffe & Sons Limited, Dorset House, Stamford St., London, S. E. 1, England; 1,110 pages, $6.

This book is the latest directory of the Federation of British Industries. The comprehensive guide to a substantial cross section of British industry lists the products and services of over 7,000 member firms under more than



maintains *Rated Flow* of Pump at Normal and HIGH TEMPERATURE Yarn Dyeing

When package dyeing machines are operated at higher temperatures, the rate of flow of the dye liquor decreases, adversely affecting both uniformity and speed of dyeing.

The Steverlynck Static Pressure System, introduced in this country exclusively by Smith, Drum & Company, provides a means of maintaining the rated flow of the pump at *all* temperatures. It does this by providing an *over-pressure*, which keeps the pump operating at full efficiency throughout the dyeing cycle. This contributes to better dispersion of dyestuffs and to more even dyeing. It also reduces dyeing time required for many processes. It further provides a means of adding dyestuff to the circulating system while continuing to operate on a closed system.

The Steverlynck System is available on all new Smith-Drum Package Dyeing Machines and it may be added to existing machines of any make, provided the equipment is already suitable for dyeing at high temperatures. Full information is available on request.

PLUS:

REDUCES TIME REQUIRED FOR MANY PROCESSES.

PREVENTS BLOW-OFF OF DYE LIQUORS NORMALLY DUE TO THERMAL EXPANSION.

PERMITS ADDITION OF DYESTUFFS WHILE OPERATING.

IMPROVES DISPERSION OF DYESTUFFS.

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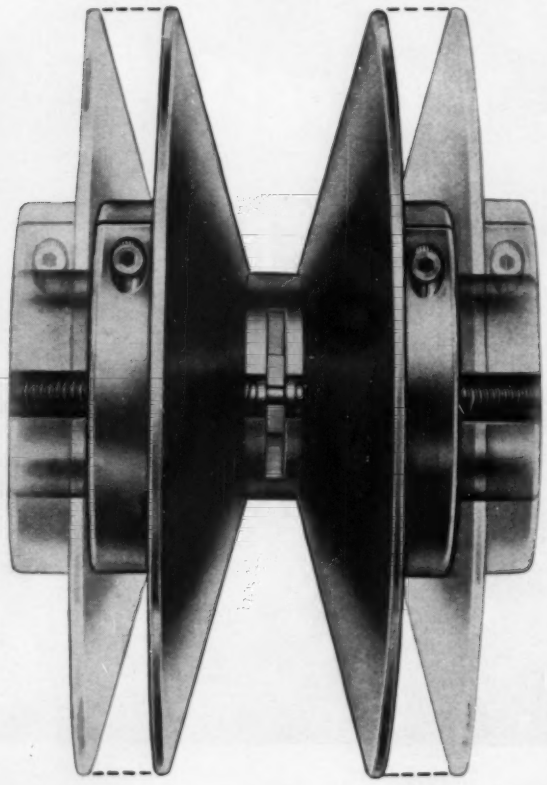

for the right speed setting

Wood's offers the simplest variable speed sheave on the market today! So easy to change speeds. Simply turn the single adjusting screw from either side to change pitch diameter. With the speed chart furnished you can adjust the sheave to the desired speed without trial and error. Simplified design provides positive clamping of the two adjustable flanges . . . eliminates fretting corrosion. Single wide range belt gives maximum HP efficiency. Does away with the problem of maintaining matched belts and matched grooves. (Maintenance costs go down because no periodic lubrication is necessary for the drive.)

If you are interested in lowering costs, ask for complete information on the most talked about drive in the Spin-Weave Industry, write for Bulletin #497 and the name of your nearest Wood's distributor. No obligation.

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5,000 alphabetical headings. The book lists the full names, addresses, range of products or services, and in some cases branch offices, overseas agents, and subsidiary companies.

BRAZING MANUAL, by Committee on Brazing and Soldering, American Welding Society; Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y.; 208 pages, $4.75.

Here in one volume are the up-to-the-minute details of all brazing processes used in the major industries. Separate chapters describe the principles, equipment, and procedures involved in the eight brazing processes. Special attention is given to joint design, base and metal fillers, fluxes and atmospheres, and causes of defects.

PROCEEDINGS OF THE THIRD ANNUAL MEETING OF STANDARDS ENGINEERS SOCIETY, by Standards Engineers Society, Box 281, Camden 1, N. J.; 48 pages, $3.

Cooperation of government and industry in work on standards is the theme stressed in the report of this meeting, held at Atlantic City, N. J., in 1954. The place of standardization in management and suggestions on how to set up and operate a materials department are also discussed.

DIRECTORY OF DEPARTMENT STORES, by Department Store Guide, Inc., 2 Park Ave., New York 16, N. Y.; 808 pages, $40.

A complete guide to the 3,052 chain and independent stores that make up the $20-billion department-store market is contained in this book. Also included are names of buyers, merchandise managers and executives; branch-store locations; areas of operation; telephone numbers; and N. Y. resident buyers.

DEVELOPING YOUR EXECUTIVE SKILLS, by Auren Uris; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; 288 pages, $4.50.

A complete self-study and self-help manual, this practical book is designed for executives and businessmen up and down the line. It is based on the work of the Research Institute of America, the world's largest business research and advisory organization.

The book contains how-to-do-it chapters on such subjects as being a good administrator, decision making, long-range planning, interviewing, sharpening mental focus and memory, and developing leadership techniques.

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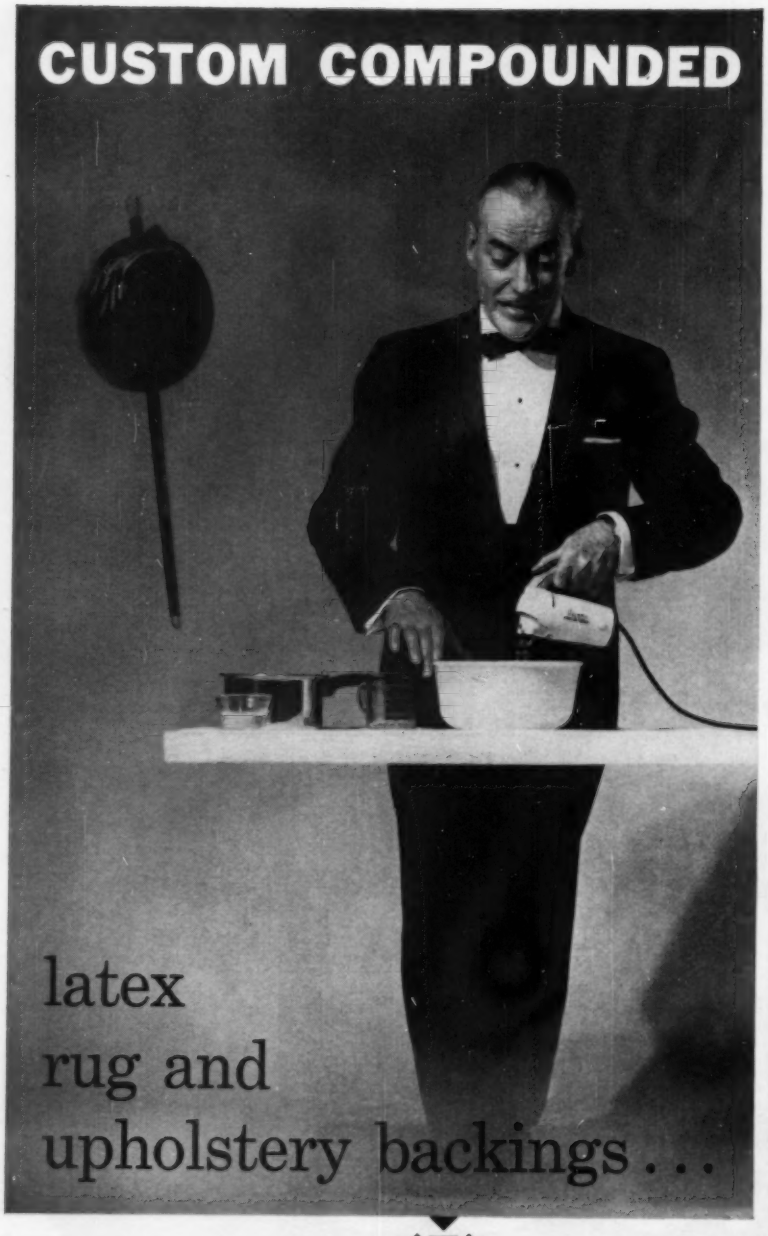

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POINTERS

CONTINUED FROM PAGE 143

11. "The big thing is keeping a smooth-running operation. I've found one sure way to do it is to bend over backwards to avoid playing favorites. Then every employee works better with the other fellow on the job."

12. "I try to locate troubles before they break out. Just about 25 percent of my time is spent that way. Experience has taught me it's a lot easier to stop something before it comes to the surface than to clean up after it has boiled over."

13. "I always keep a favorable attitude toward the company. What gripes I have against the front office I keep to myself. I've noticed that where supervisors air their dislikes in front of their workers, the efficiency drops right there and soon the whole group is doing the same thing."

14. "Patience is the greatest asset any supervisor can have in handling any man or any problem. Until he learns patience, he can't call himself a good foreman. With it, you never make snap judgments."

15. "The toughest job any supervisor ever faces is in disciplining one of the employees under him. It's a point at which he can start a chain reaction that will lead to an explosion of future trouble for him. I make sure I have all the facts before I ever discipline any employee. That's kept me from making mistakes that could have disrupted my whole department later on."

16. "My pet method of getting the job done is to find every opportunity I can to praise individual employees for their work. It works wonders. But it can be dangerous if it's overdone. You have to learn the proper balance and stick to it."

17. "I'm careful to avoid prejudice against any individual employee. If he or she has feelings, traits, or actions I dislike, I ignore them completely as long as that individual does a good job. I've seen too many cases where supervisors let prejudices against certain employees ruin all the other good things they have done and completely mess up their departments."

18. "To me one of the most important things you can do is never

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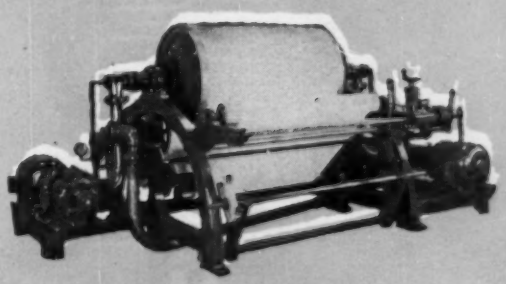
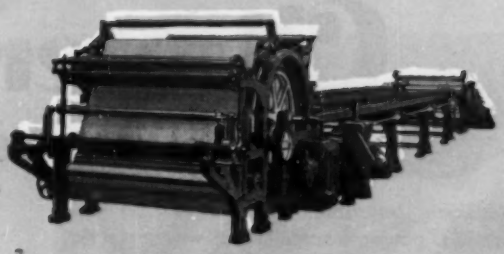


V.V. DUAL PUMP DECATER



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overlook an opportunity to build up a man's job in his own estimation. The man who is proud of his job always does more for you with less trouble."

19. "I keep building on each employee's future with the company. I've found the people under me have to have goals toward which to work hard; without them, they never have the incentive to do anything extra. I never overlook an opportunity to give them something to work for."

20. "A supervisor has to dish out criticism; that's one of the reasons he's in his job. But I've found there are two ways to do it—constructively or destructively. Whenever I criticize an employee, I do it constructively; and I've always had good results with this approach."

21. "Show an interest in and appreciation of an employee's work; that makes him a better man and easier to handle. If you confine your efforts to keeping him working, he'll use every dodge he can think of to keep from doing anything extra."

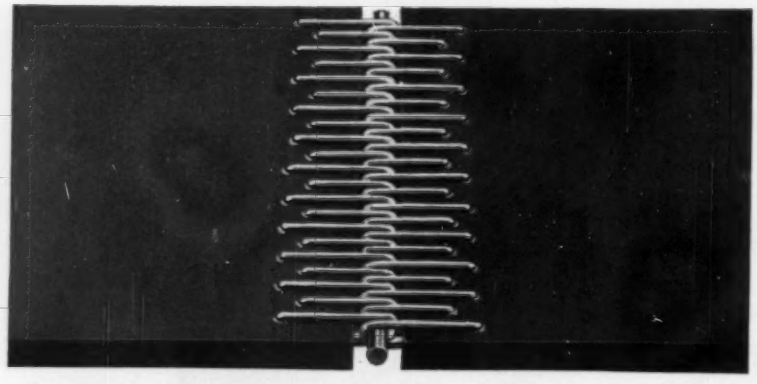
22. "My pet rule is to always discuss every job problem with the workers involved. Following it has done more for me in my department than anything else I've ever tried to do. You get more willingness to do something extra from your people when they have a chance to help you work things out."

23. "One of my pet methods is to give my employees things to work up on their own. That keeps them from being mere machines. It keeps them alert. It gives them something extra when they have to think out a problem all by themselves during an emergency."

24 "I carefully avoid making promises that I may not be able to fulfill. I've found that unkept promises are a bigger source of resentment by employees against their supervisors than anything else. When it involves the company, I make sure first it will be delivered before I promise my workers anything."

25. "I try to be consistent in my approach to all the problems concerned with my department. I've found the workers are then never afraid of my moods or uncertain about what I will do. It helps them work out a lot of problems on their own, too."

the fastest way to make ends meet



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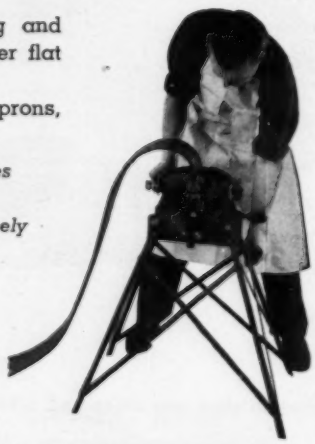

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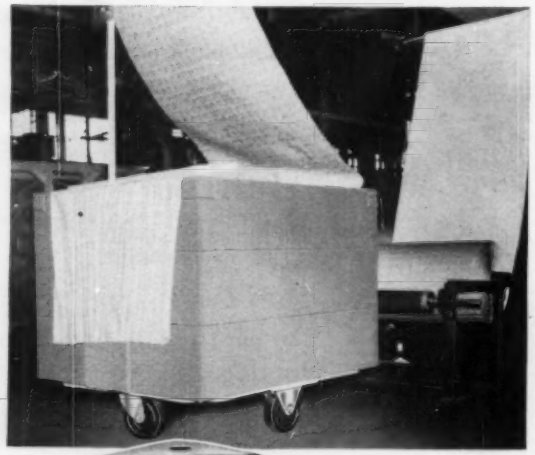
Faultless CASTER MATERIALS HANDLING FACTS

CRANSTON PRINT WORKS, WEBSTER, MASS., USES FAULTLESS CASTERS FOR ECONOMICAL FLOW OF FABRICS



Standardization of materials handling equipment methods has resulted in the establishment of an economical, simple procedure of product flow in the Cranston Print Works at Webster, Mass. Faultless Caster equipped cloth box trucks are used at each stage of the Cranston production process—from the time the cloth is first printed until the cloth is "finished." In this manner large quantities of cloth in process can be handled with a minimum of space and effort.

200 SERIES WITH DOUBLE BALL BEARING SWIVEL

Heavy pressed steel frame and King-pin assembly has made it famous for heavy duty work. Large size balls distribute the load around an unusually large raceway. All bearing surfaces are hardened.

Cranston engineers selected Faultless 200 Series Swivel and 2700 Series Rigid, and Faultless 900 Series Swivel and 9700 Series Rigid casters for all their trucks. Eight inch diameter, Ruberex, cushion-tread, wheels were chosen for use on the smooth concrete floors of the Massachusetts plant. The rigid plate casters are blocked up on the outside centers on the trucks. This provides a highly maneuverable tilt-type conveyance, ideally suited in plants where sharp turns are required.

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FAULTLESS SOLVES THE TOUGH JOBS

ROUND TABLE

CONTINUED FROM PAGE 10

After all I went through and the points I proved, would you believe that they gave me the overseer's job without any increase in pay? I bided my time, figuring they were giving me a trial at it; but after proving successful and waiting almost a year, I finally got enough gumption to go to them for a raise. I was even questioned on it. They said it would have been better if I had left it to their discretion. . . .

I finally got what I termed a measly raise, and I started losing interest in my work. . . . I am now out looking for a change. I am too honest and conscientious to lose faith in my work; so I've put in application with services for employment elsewhere.

They really don't appreciate good workers here; so I figured before I'm too old and while I'm still enjoying wonderful health I may as well make a change. . . .

I agree with all you said in your editorial about the things mills do to give the industry a bad reputation as a place to work. I've been around long enough to see every one of those things done.

A.V.T.

Providence, R. I.

GEORGIA T.O.E.

CONTINUED FROM PAGE 99

sense of feel based on the best experience in weaving each style of cloth.

Types of Checkstraps Vary

Twelve mills gave reports on the checkstraps they are using. Seven mills are using conventional slotted checkstraps only; four mills use both slotted and endless straps; and one mill uses only endless straps on X-2 looms.

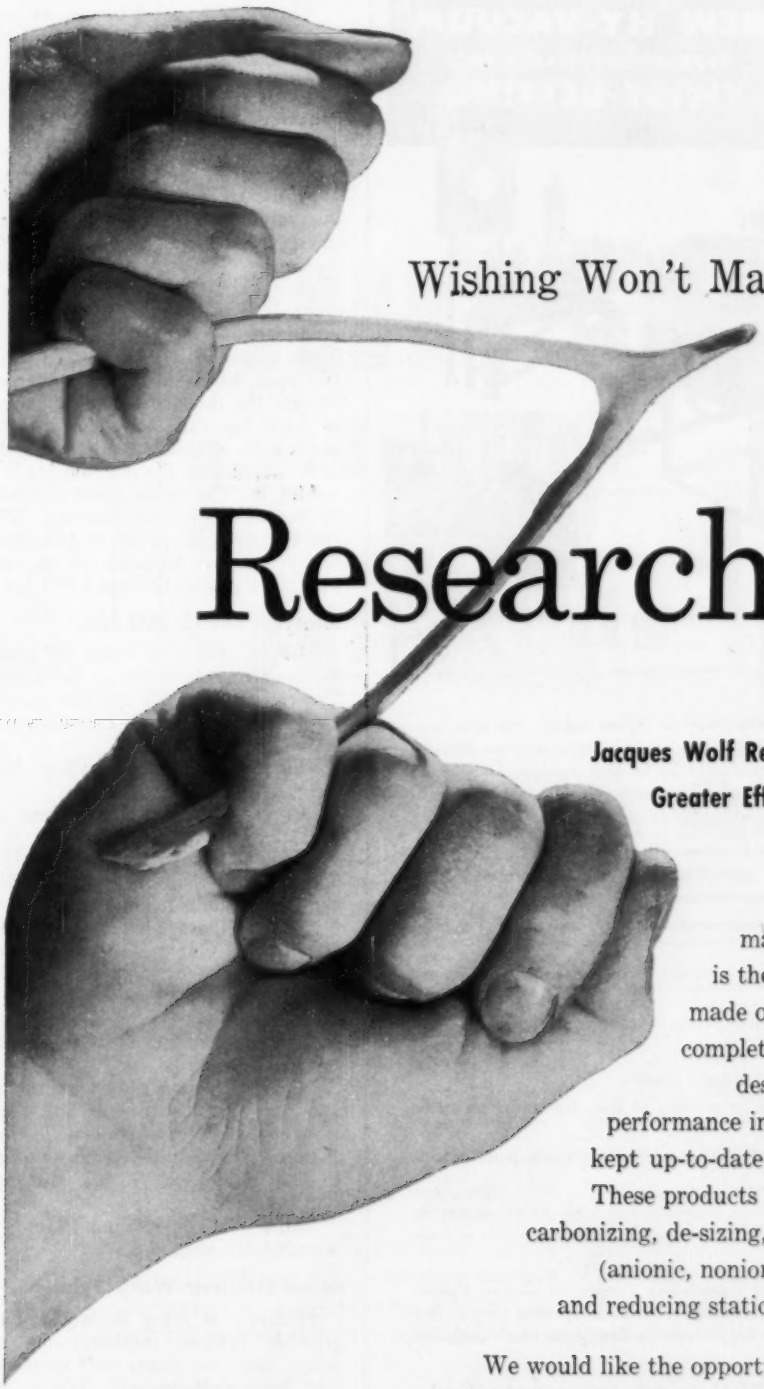
Here's what some of the mills say about the checkstraps they are using:

Mill A—"We are running both slotted and endless straps and are trying some of the multiple-type rubber-composition straps.

"Our latest figures on checkstrap life show 580 loom hours for slotted straps and 3,092 loom hours on endless straps. We don't have any figures on the life of multiple straps. However, we find that they give less trouble on the start-up after a shutdown than other straps."

Mill B—"We use both endless and slotted checkstraps. There is little difference between the performance of the two types of straps. We are changing to leather straps on all our looms."

Mill C—"We use leather endless



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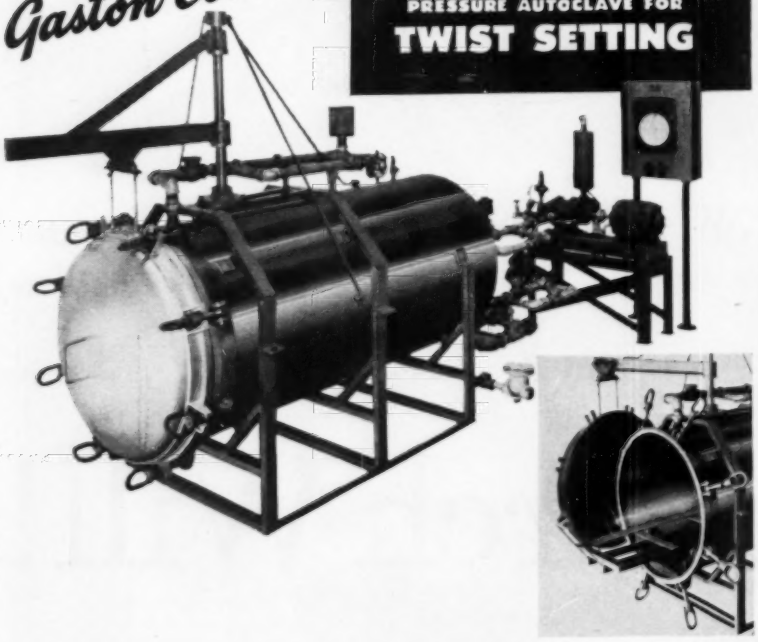
Gaston County

NEW 'HY-VACUUM'
PRESSURE AUTOCLAVE FOR
TWIST SETTING



Developed primarily for steam setting the twist in Nylon yarns, this new controlled vacuum-pressure system has a definite place in other types of steam processing. Experimental projects now being conducted by leading woolen and worsted mills are showing such remarkable results, it may indicate the replacement of conventional steam box methods, on the basis of quality alone.

THE PROCESS — More Efficient, More Economical

- Start vacuum pump by means of push button, 22" to 25" vacuum is produced in 2 to 3 minutes. Pump stops automatically.
- Steam is injected at controlled temperature for any desired time period. Steam is expelled automatically.
- Automatic controls start pump and vacuum cycle is repeated to remove moisture from vessel.
- Pump stops and vacuum relief valve opens to restore atmospheric conditions inside vessel.

THE ADVANTAGES — Higher Quality, Bigger Profits

- Time saving. Complete process in 30 minutes or less, depending on steam injection cycle required.
- Positive shrinkage. Yarn is shrunk and twist is set *uniformly* from *outside to spool core.*

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checkstraps on our 70-in. X-2 looms.

"On other types of looms, we get better results from slotted straps. Our loomfixers just cannot do the job they like to do with endless straps."

Practical Loom Speeds

Ten mills gave the loom speeds they find most practical on X-2 looms. With the information on loom speeds, they also gave shuttle life. Loom speeds vary between 185 ppm. on 40-in. looms to 160 ppm. on 70-in. looms. Shuttle life runs up to 3,200 loom hours. The information by mills is:

Mill A—"We operate 50-in. X-2 looms at 163 and 173 ppm. To date, 163 ppm. has been more satisfactory because the shuttles cannot be boxed at high speeds. At these speeds, weave-room efficiency is approximately 92% and shuttle life is 2,000 hrs."

Mill B—"Our loom speed depends on the fabrics we are weaving. We run 40-in. X-2 looms 185 to 190 ppm. On looms that formerly ran at 200 ppm., our shuttle life was 2,037 hrs."

Shuttles Last 3,200 Hrs.

Mill C—"We have found 185 ppm. the most practical speed on X-2 looms. Our efficiency is 91% and our shuttle life is 1,970 hrs. on X-2 looms with dobbies."

Mill D—"We operate 50-in. X-2 looms at 168 ppm."

Mill E—"We run 60-in. looms at 162 ppm."

Mill F—"We run our looms 184 ppm. Weave-room efficiency is 92%, and shuttle life is 3,200 hrs."

Mill G—"Our 44-in. looms operate at 172 ppm. Our weave-room production varies but averages between 90 and 91%."

Mill H—"Loom speed is 184 ppm.; weave-room efficiency is 91%; shuttle life is 1,700 hrs."

Mill I—"Looms 46 ins. wide run at 186 ppm. We haven't tried any other loom speeds. Weave-room production averages 94%. Shuttles last from seven to eight months at 136 hrs. of operation per week."

Mill J—"We operate our 70-in. X-2 looms at 160 ppm."

More-Efficient Warp Tying

Methods of tying in warps with portable tying-in machines in the weave room are pretty well standardized from mill to mill. Warps are taped on the ends when beams are doffed at slashers. Warps are usually leased at the loom with an end-to-end lease.

Two mills have changed their tying-in machines recently for greater efficiency. One mill has changed 80% of its tying from portable to stationary tying. The other mill has changed

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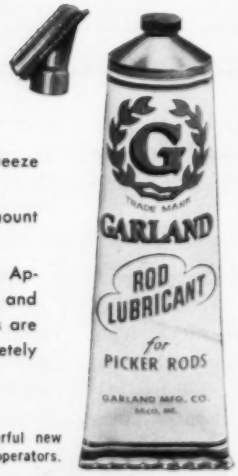
It's the sensational new Garland Rod Lubricant and Squeeze Slide Applicator.

Garland Rod Lubricant contains exactly the right amount of tackiness to adhere to the rod for high efficiency.

Loom operators welcome the Garland Squeeze Slide Applicator that screws on, to replace tube cap. Fits all rods and spreads a thin uniform film of grease. Fewer applications are required, saving time. Oil spotting of cloth is completely eliminated.



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from a narrow portable machine to a wide one. The reports from the two mills are:

Mill A—"We are now tying approximately 80% of the warps on our narrow cam looms with a stationary machine. We made this change from portable tying because so many warps ran out at once. By having tied warps stored right on the weave-room floor, we can restart the looms faster. From our checks, we think the stationary machine does a little better tying job than the portable."

Mill B—"We switched our portable tying from a Barber-Colman LC-46-in. machine to a Barber-Colman MC-56-in. machine. By making the change, we cut one man off each shift and amortized the purchase in approximately six months. Our weave-room efficiency is greater because we have cut the downtime 30 mins. for each warp-out."

Stop Cracks in Corduroy

Three mills gave answers to the question: "What causes cracks in corduroy, and how do you eliminate them?" Answers from two mills are:

Mill A—"Cracks are caused by worn cams, high or low temples, improperly set harnesses, worn harness sheaves, worn timing gear, lost motion in the take-up roll or crankshaft bearings, and improper timing of spring-type crank arms. We eliminate cracks by correcting these loom motions. We also check the looms for (1) true-running shuttles, (2) a straight warp line, and (3) standard loom settings."

Mill B—"Cracks are caused by (1) the let-off not set properly, (2) improper harness settings and timing, (3) uneven warp line, and (4) temples binding.

"To eliminate cracks, we keep the let-off working properly; set harnesses correctly; time harnesses from 1½ to 2½ ins. from the fell of the cloth, depending on the type of looms; run a straight warp line; and keep temples free from binding so that they take up properly and hold the cloth to its full width."

SMALL-MILL OUTPUT

CONTINUED FROM PAGE 101

The spinning department changed overall drafting equipment to Roberts High Draft elements. The new drafting equipment has increased the yarn break factor about 20% and the yarn produced is more even, with a subsequent reduction in the number of ends down in spinning and weaving.

IN OUR 57 years of chemical experience, we've never lost that wholehearted desire to treat our customers as staunch friends . . . to bend over backwards when the situation calls for it . . . and to give complete customer satisfaction. ¶We'd relish the opportunity to show you.

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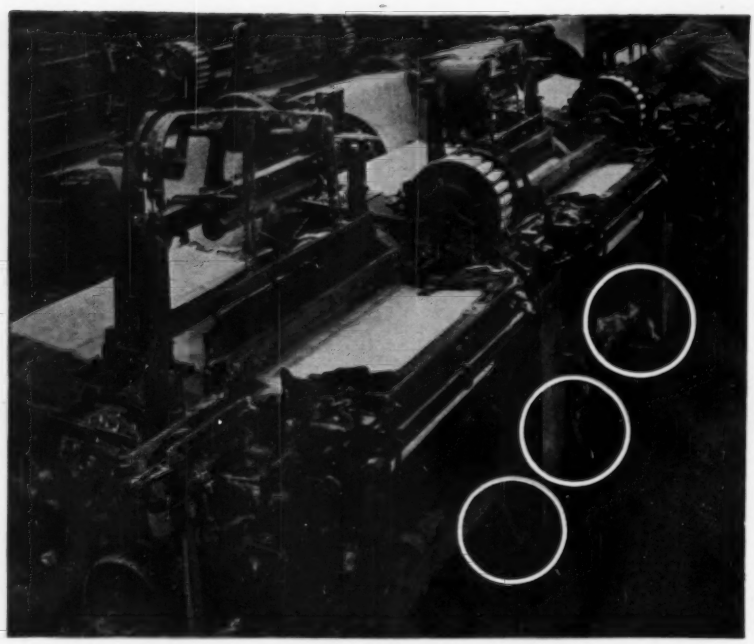
IN CANADA: Standard Chemical Limited
and its Commercial Chemicals Division



Easier Installation...
WITH
Westsorb®
ADHESIVE-COATED FELT MOUNTS

✣ Pre-applied on both sides. Peel off protective backing and Westsorb pad is ready for use (no cement necessary). Sticks firmly to any dry surface, will NOT SLIP. NO BOLTS needed.

Move your equipment when necessary – quickly – without drilling holes – with Westsorb felt mounts. They eliminate floor damage, prolong machine life, absorb vibration and reduce noise, saving many times their cost.

Write today for free Westsorb sample and descriptive folder.

WESTSORB AVAILABLE AND IN STOCK AT:

American Supply Co., Central Falls, R.I. • Schmidt Mfg. Co. of S.C., Greenville, S.C.
W. D. Dodenhoff Co., Inc., Greenville, S.C. • Odell Mill Supply Co., Greensboro, N.C.
Industrial Suppliers, Inc., La Grange, Ga. • Schmidt Mfg. Co., New Bedford, Mass.

WESTERN Felt WORKS

4021-4139 Ogden Ave., Chicago 23, Ill.
Branch Offices in Principal Cities

MANUFACTURERS AND CUTTERS OF WOOL FELTS

The spinning frames are all Whitin Model A machines, 2¾-in. gauge. Warp rings are 1 $\frac{15}{16}$ ins., and filling rings measure 1 $\frac{7}{8}$ ins. The new drafting systems draft 30 to 32 compared with a draft of 18 used with the old long-draft Casablanca system.

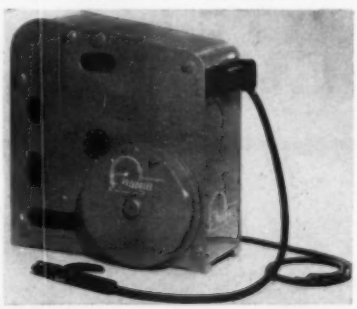
"We get an advantage in running coarser roving, decreased creeling, and increased spindles per spinner on the same operation," says John D. Jones, superintendent of the mill. "Roving used to be 2.10 hk. for warp and 2.85 hk. for filling. It's now 1.50 hk. for both yarns."

The spinning department had one frame running experimentally with the new drafting system for several months. As with the drawing frames, visits to other mills and performance at Bamberg convinced the officials that the system being used experimentally was the one to buy.

"We plan to change over to 8¾-in. bobbins from the 8-in. type in the near future," says C. S. Henerey, president of the mill. "This change will cut battery-filling costs and spinning doffing costs. We have to keep making these changes to keep abreast of our large competitors, particularly when competition from Japan is forcing them to modernize. We feel our money was well spent and that the changes have kept us in business."

PLANT MAINTENANCE

CONTINUED FROM PAGE 111



Cable Reel

An electric-arc cable reel that unwinds cable to 100 ft. was shown by United Specialty Corp., El Dorado, Ark. Cable unwinds freely and locks at any desired length; a slight tug releases the locking pawl, and the geared spring retracts the cable. Housing and drums are of cast aluminum. Maximum cable size is 2/0.

The mechanism is enclosed in a compact container. No special motors, shaft extensions, mechanical braking devices, or special windings are required. There are no moving parts to wear, no solenoid hum, and no possibility of the motor reversing. DynAC can be used on any standard motor. (A-47)

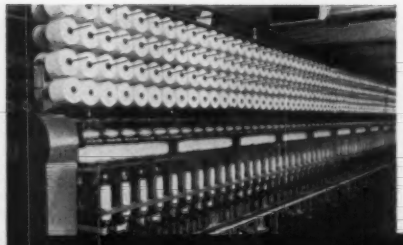
A zone-marking paint to mark traffic aisles was shown by Valdura Maintenance

Whether you loom fabrics for apparel or for drapery, upholstery or slipcovers—you can now make dramatic use of some of the most brilliant colors ever seen, specifically created for your fabrics' end uses. New jewel tones, in Celaperm, have been developed by Celanese with applications both for apparel and home furnishings. Here is a provocative new color idea which will give fresh direction and inspiration to your styling. *And* a sound basis for promotion to and *by* your customers. See new jewel colors with Far Eastern feeling at Celanese now . . . let your imagination go to work for *your* new lines.

Celanese

*Reg. U. S. Pat. Off.

CORPORATION OF AMERICA, NEW YORK 16



Tops for Cotton Tire Cord Paper

COLLINS Big Ring Twisters =

Collins Big Ring Twisters produce 4 to 12 lb. packages of exceptionally clean knotless yarns, when employing a 6 to 8 in. ring size.

High Speeds are possible because Collins Big Ring Twisters are equipped with large diameter pulleys, anti-friction idlers, ball bearing front roller stands, large diameter feed rolls, and roller bearing spindles.

Low Cost is achieved through increased twisting and winding efficiency. *Quality* is inherent in big packages of knotless yarns. Write for full information on Collins Big Ring Twisters and Collins convenient financing plan.

Big Packages Clean Knotless Yarn at Higher Speed ...Low Cost

COLLINS BROTHERS MACHINE COMPANY
647 Roosevelt Ave., Pawtucket, R. I., Est. 1866
CHARLOTTE • CHICAGO • TORONTO

There is a Collins Twister for Every Ply Yarn Construction

STEEL

Every kind in stock

Immediate shipment

Principal Products: Bars, Structurals, Plates, Sheets, Tubing ... Carbon, Alloy and Stainless Steels, Machinery and Tools, etc.

RYERSON

Joseph T. Ryerson & Son, Inc. Plants at: New York • Boston • Wallingford, Conn. • Philadelphia • Charlotte, N. C. • Cincinnati • Cleveland • Detroit Pittsburgh • Buffalo • Chicago • Milwaukee • St. Louis • Los Angeles San Francisco • Spokane • Seattle

Div., American-Marietta Co., Chicago, Ill. The paint is made in white, yellow, red, and orange. It can be applied with brush, spray, or applicator to brick, concrete, asphalt, wood, creosote blocks, and macadam. A 4-in. line 1,200 ft. long can be covered with 1 gal. of paint. The paint drys in 30 mins. to permit traffic. (A-48)

A liquid neoprene that is applied like paint with a roller, brush, or spray was shown by Gates Engineering Co., Wilmington, Del. The material provides high corrosion resistance at low cost. It is applied to storage tanks and other metal surfaces subjected to corrosive fumes and weather. (A-49)

Shatterproof hacksaw blades were shown by Henry Disston Div., H. K. Porter Co., Inc., Philadelphia, Pa. This safe hand blade is hardened on its tooth edge only. Consequently the body of the blade is flexible to absorb the severest cutting strains without shattering. Standard blade lengths and teeth per inch are available. (A-50)

Mop Washer

The Jet Streem mop washer shown by Geerpres Wringer, Inc., Muskegon, Mich., is a compact, bottomless unit that can be attached to any water outlet adapted for hose connections. The washer can be placed in sinks, over floor drains, or in mop wagons. Six full-flare sprays force water through the mop strands and flush out dirt, caustic, and foreign matter. There is no splashing on operators, walls, or surrounding areas. (A-51)

Automatic temperature controls for large and small jobs were shown by Sarco Co., Inc., New York, N. Y. The system is a simple electric indicating temperature control and provides accuracy wthin ½° F. (A-52)

A complete line of casters was shown by Bond Foundry & Machine Co., Manheim, Pa. The casters include stationary truck casters, swivel casters, and dual-wheel casters with oscillating axles. (A-53)

Flexible insulated couplings were featured by Charles Bond Co., Philadelphia, Pa. The couplings are made in horsepower ratings of ¼ to 100 at 100 rpm. They absorb shock and are easy on bearings. Prices begin at 64¢ for a 1⅛-in. coupling and go through $140 for a 12-in. coupling. (A-54)

A steam gun that can be operated from the plant steam supply without special generating equipment was shown by Oakite Products Co., New York, N. Y. All you need is the gun, steam and solu-

A softer "hand" with QUADRASOFT

You know that the softness, the pleasant "feel" of your fabrics means a lot in the final sale. So you want a softener that will guarantee these qualities in the finished product . . . at a reasonable price.
Rumford offers a type of Quadrasoft to fit every fabric requirement at prices that warrant a trial in your plant.

Quadrasoft C — cationic — compatible with starches, gelatins and resins . . . 15¢ lb.
Quadrasoft A • L — nonionic — water dispersible anti-static agent and lubricant . 15¢ lb.
Quadrasoft A • N — anionic — water dispersible softener of fatty acid glycol type . 11¢ lb.

All are non-yellowing at high temperatures. Order a sample for plant trial on the handy coupon.

another famous product of
RUMFORD CHEMICAL WORKS
makers of Rumford Sequestering and Scouring Agents
Rumford Printing Gums • Rumford Finishing Specialties
Rumford Acids

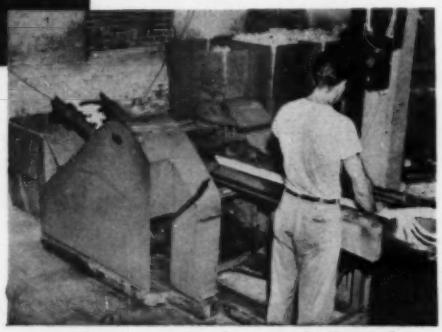
RUMFORD CHEMICAL WORKS
Technical Service Department, 11 Newman Ave., Rumford 16, R. I.

Please send us a sample of Quadrasoft ☐ C ☐ A • L ☐ A • N Check one.

NAME _____
COMPANY _____
ADDRESS _____

Cut Tow

Into 3/4" To 6" STAPLE LENGTHS



You can readily cut nylon, rayon, other synthetic and natural fiber tow, into uniform lengths varying from ¾" to 6" on Taylor Stiles Staple Cutters.

The operation is continuous, the rate depending on the size of tow and the length of cut.

Changes in length are quickly made by means of a vari-speed motor, or by changing sprockets when variations in staple lengths are infrequent.

We Also Make Cutters For Thread Waste, Rags, etc.

Write today for four page descriptive folder.

TAYLOR STILES & COMPANY

15 Bridge Street Riegelsville, New Jersey

It Ain't Hay

Add up your monthly bills for rotating steam joints and you'll get an annual total that "ain't hay."

Compare ROTARY UNION performance with that of any other joint and you will find that your savings through longer service and reduced maintenance "ain't hay" either. It will pay you to contact our nearest office or write for Bulletin 700 today.

ROTARY UNION { Self-Aligning • Self Adjusting / Ball Bearing • Positive Mechanical Seal

Trade Mark—Patented

Type S ROTARY UNION

Baltimore
Camden, N. J.
Chicago
Cleveland
Los Angeles
New York
Providence
Montreal
Toronto

"WHERE *Good Connections* COUNT"®

PERFECTING SERVICE COMPANY

334 Atando Ave. Charlotte, N. C.

tion hose, a cleaning solution and container, and 30 lbs. of steam pressure. The solution is mixed in the container and fired through the gun. The handle does not heat up, the gun is light, and the hose does not twist. **(A-55)**

Tug Bar

A tug bar weighing 110 lbs. that can move loads up to 4,000 lbs. was shown by Western Gear Corp. of Texas, Houston, Tex. The bar operates wherever a man can stand in areas inaccessible to lift trucks. Other advantages are low floor loading, flexible operation, ease of control, long life, and low maintenance. The bar is available for 110-v. a.c. and 24-v. d.c. (A-56)

Cutting-Oil Unit

A cutting-oil dispensing unit that saves time was shown by Ridge Tool Co., Elyria, Ohio. The unit includes a hand-operated dispenser, flexible hose, chip pan with handles, reservoir with carrying bale, and a 2-gal. can of cutting oil. Both hose and chip pan are screened so that the oil can be used over and over. **(A-57)**

An all-glass thermal insulating material was shown by Pittsburgh Corning Corp., Pittsburgh, Pa. The insulating material is resistant to moisture, fire, acid, and rot. It is strong, lightweight, and easily cut to size and shape. **(A-58)**

An inexpensive method of fixing stripped threads by using Heli-Coil screw-

PREVIEW

of the most powerful advertising and publicity program ever to back a single fiber label

Everyone along the line stands to benefit from this concentrated backing of the Avisco name and the Avisco Integrity Tag. Whether you're converter or retailer, finisher or wholesaler, designer or cutter, your use of a textile fiber of known quality standards and predictable sales appeal will smooth the peaks and valleys of production and sales.

The shift of emphasis of all American Viscose advertising and publicity to the Avisco name in mid-1955 has already made a deep impression upon consumers and has made itself felt among our friends in the trade. Throughout 1956 every ounce of our advertising effort will be exerted in this direction. The impression will grow and grow.

We invite you to grow with the name

AVISCO®

COLORFUL MAGAZINE ADVERTISING on all product groups in **Life, The Saturday Evening Post, Good Housekeeping, McCall's, Better Homes & Gardens, New York Times Magazine, Fortune, Business Week, House Beautiful, House & Garden, Living for Young Homemakers, Vogue** and **Harper's Bazaar.** Over 30 million homes!

NATIONWIDE TV MESSAGES on Arlene Francis' "Home Show" throughout the year. Multiple messages during each peak selling week. Over a million viewers for each message!

TRADE ADVERTISING in important magazines and papers.

MERCHANDISING SUPPORT with versatile display pieces and promotion ideas.

PRODUCT PUBLICITY for home furnishings and apparel.

MORE POWER than ever behind the Avisco Integrity Tag, silent salesman behind your qualified products.

AMERICAN VISCOSE CORPORATION, 350 Fifth Avenue, New York 1, N. Y. LA 4-7200

in plant

or office

You'll find Halsey Taylor Coolers extra safe for textile mill service. Whether it's coolers for plant use or fountains for the office, you are assured the utmost in sanitation, safety and dependability, when you select Halsey Taylor! The Halsey W. Taylor Co., Warren, Ohio

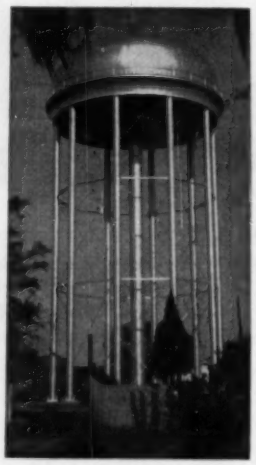
Explosion-proof coolers and wall fountains (as illustrated), remote types and cafeteria models. Write for catalog.

HALSEY® TAYLOR

Industry's Favorite Coolers

TW-61

TANKS AND VESSELS FOR THE TEXTILE INDUSTRY



● COLE builds elevated tanks and vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib-boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with Monel metal.

Our long experience in the design and fabrication of vessels for the textile industry may be of help to you. Write for latest COLE catalog—*Tank Talk.*

Established 1854

R. D. COLE

- TANKS
- TOWERS
- CYLINDERS
- VESSELS
- STANDPIPES

Manufacturing Co., Newnan, Ga.

thread inserts was demonstrated by Heli-Coil Corp., Danbury, Conn. The inserts, made of stainless-steel or phosphor-bronze wire, are installed in old screw holes after drilling and tapping. The operation is said to produce a permanently repaired thread in a matter of minutes. (A-59)

An alkaline cleaning compound that simultaneously strips rust and oil-based deposits from metal was shown by Oakite Products, Inc., New York, N. Y. The cleaner will not attack sound metal, and no acidproof equipment is required. Called Rustripper, the cleaner is especially useful for removing deposits that retard heat transfer as well as for cleaning drums, pipes, and valves. (A-60)

Saw-Blade Guard

A circular table-saw guard made of cast aluminum and ¼-in. transparent, shatterproof Plexiglass was shown by Brett-Guard Co., Englewood, N. J. The guard protects operators from the dangerous saw blade and at the same time permits full vision and accuracy during all common sawing operations. A flick of a knob sets the guard into any of three operating positions by means of aligned holes in extension plates attached to the table top. The guard itself provides horizontal and vertical pressure and can be used as an overriding fence for angular work. (A-61)

Lift trucks operated by liquid-petroleum gas were shown by Yale & Towne Mfg. Co., Philadelphia, Pa. The truck capacities are 2,000 to 10,000 lbs. The trucks are said to offer savings in fuel consumed, longer engine life, and longer parts life. (A-62)

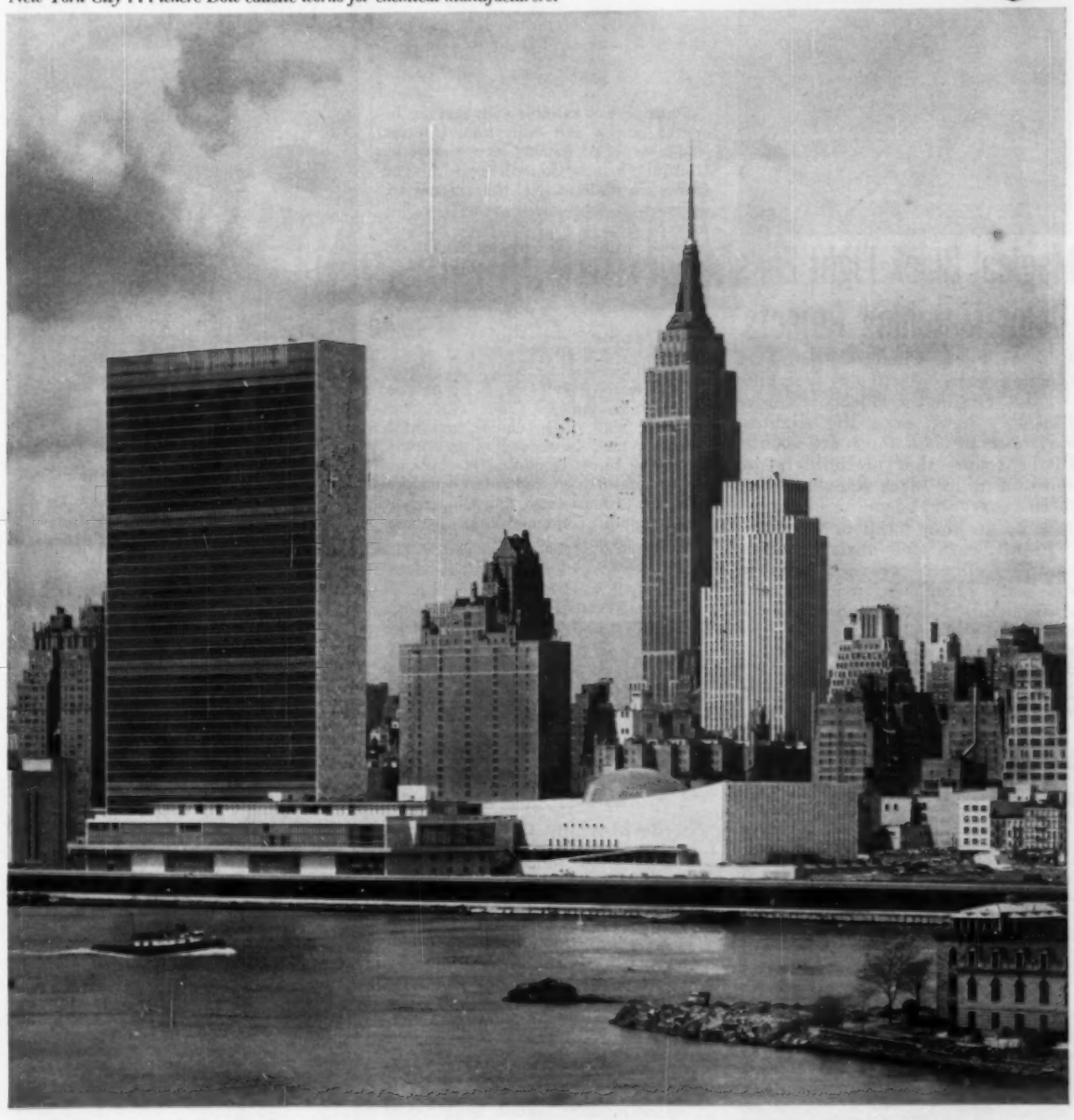
Card-Filing Machine

An electrically powered card-filing unit was a feature in the booth of Remington Rand, Div. of Sperry Rand Corp., New York, N. Y. The unit contained 40,000 maintenance records and delivered any card desired in only a few seconds. (A-63)

A renewable seat-ring gate valve that permits replacement of seat rings in less than 10 mins. under normal conditions

New York City . . . where Dow caustic works for chemical manufacturers.

DOW



wherever you're producing

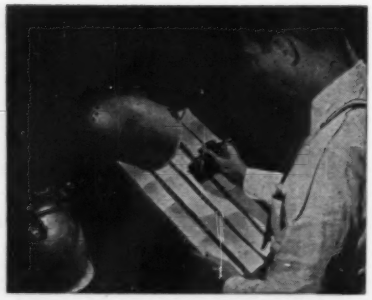
DEPENDABLE CAUSTIC SODA RESEARCH IS ASSURED FROM DOW

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're *sure* of getting rapid, dependable service from Dow.

Continual Dow *research* on processing that involves caustic now . . . or will years from now . . . develops ways for you to do it better, faster, at decreased cost. This creatively practical planning helps you to improved, more uniform products to sell profitably in new markets.

Then, too—there's multiplant production, flexible delivery network, prompt field technical service. Does Dow have *your* order? THE DOW CHEMICAL COMPANY, Dept. AL 751E, Midland, Michigan.

you can depend on DOW CHEMICALS DOW



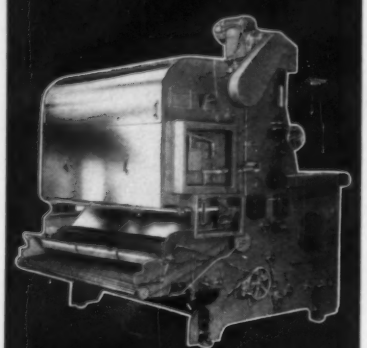
Magical Black Light Ends Color Matching Rejects

Here at last is a method that takes the guesswork out of color matching — and eliminates rejects. Under Blak-Ray light, even the slightest variations in color tones are visible. Plants report that preliminary inspection under black light is saving its cost every week by eliminating rejects before they happen.

Result: yarn and fabric manufacturers—spinners, weavers, knitters, finishers, bleachers, printers and throwsters — are fast adopting the black light system.

Full details are given in new Case History #111X, available free from the **Black Light Corporation of America,** Distributors for Ultra-Violet Products, Inc. 5114 Walnut Grove Avenue; San Gabriel, California. Distributors in principal cities.

Geo.S.HARWOOD & Son



SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

50 LAGRANGE STREET
WORCESTER 8, MASS.

was shown by Fairbanks Co., New York, N. Y. All you need is a screwdriver; the valve body remains installed in the line while you work. **(A-64)**

Permanent or movable walls that can be erected quickly and easily from Unistrut adjustable metal framing were shown by Unistrut Products Co., Chicago, Ill. The frames are made of steel channel and are designed to take any standard paneling material from ⅛ to ½ in. thick, such as plywood, hardwood, expanded metal, and glass. **(A-65)**

Gear Motor

A high-speed motor with built-in gearing was featured by U. S. Electrical Motors, Inc., Los Angeles, Calif. The motors are made with single, double, and triple reductions and in sizes of ¼ to 30 hp. Speeds are 10 to 10,000 rpm.

Other qualities are said to be economical operation, compactness, quiet operation, and a smoothly contoured surface for easy cleaning. **(A-66)**

Textile-Machine Drive

A variable-speed drive that controls the speed of take-ups for textile finishing, processing, and cloth-inspecting machines at any speed between 105 and 2,300 rpm. was operating at the booth of Electro Dynamic Div., General Dynamics Corp., Bayonne, N. J.

The motors for the control range in size from ¾ to 3 hp. The control circuits provide constant torque capability from ratios of 20 to 1 to as high as 60 to 1. Speed changes may be made from remote points while the processing machine is in operation. The controls are mounted in a wall cabinet. **(A-67)**

A portable two-ton Gantry crane that can be set up or dismantled by two men in 10 min. was shown by Wise Engineering Co., Newark, N. J. An extra feature is removable boots with 4-in. casters. **(A-68)**

Electric Motors

Several motors suitable for textile machines were shown by Electro Dynamic Div., General Dynamics Corp., Bayonne, N. J. The motors include: (1) gear motors with a wide range of speeds, (2) variable-speed drives connected to d.c.

DIRT can't anchor...

sails away with **Cindet**

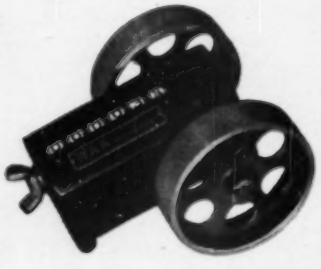
all-purpose liquid detergent

DIRT FILM breaks up on contact with Cindet suds. The particles ride up inside the bubbles — cannot anchor — literally sail away via your suction or mop pick-up. The job is easier—the surface is cleaner. Dilute in lots of water—hard water makes no difference. Use on any kind of flooring — any surface that can stand plain water.

For free sanitary survey of your premises ask your Dolge service man

DOLGE
WESTPORT, CONNECTICUT

YOU CAN COUNT ON WAK* COUNTERS



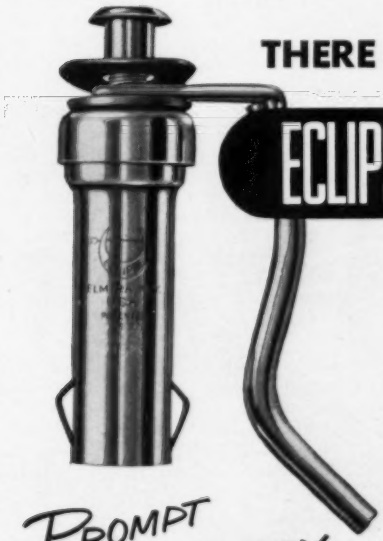
Hank Clocks	Hosiery Counters
Rotary Counters	Pairing Counters
Tenter Counters	Yardage Counters
Inspection Counters	Slasher Counters
Pick Clocks	Sewing Counters
Twister Clocks	Special Counters

* T.M. Reg. U. S. Pat. Office

See Our Representative, or Inquire Direct

WAK INDUSTRIES
1814 S. TRYON ST.
CHARLOTTE, NORTH CAROLINA

Sales doubled in '55



PROMPT DELIVERY

THERE MUST BE A REASON—and there is!

ECLIPSE BOBBIN HOLDERS

ARE THE WORLD'S FINEST

It's no exaggeration. Sales of Eclipse Bobbin Holders really skyrocketed in '55, and they're continuing to rise with every passing month. There is, of course, good reason for this gratifying sales increase. The textile industry has discovered that this bobbin holder—providing light, controlled tension which diminishes with the size of the package—drastically reduces breakbacks. This cuts maintenance requirements with resultant savings in labor costs. There is really no excuse for using old-fashioned, inefficient wooden skewers today. The modern way to spin cloth is with durable, economical Eclipse Bobbin Holders. And our increased plant capacity now assures you of prompt delivery. Better place your order today.

ECLIPSE MACHINE DIVISION ELMIRA NEW YORK

Bendix AVIATION CORPORATION

IN THE NATION'S INDUSTRY....

big business, big profits for you

making top quality *CHILDREN'S SWEATERS*... economically, on performance-proven *ORDNANCE* OGA-OTA circular, fully automatic knitting machines

● Manufacturers of children's sweaters, like manufacturers of men's and women's knitted outerwear, enthusiastically endorse and recommend ORDNANCE equipment. They praise its low operating costs—based on total production of FIRST QUALITY MERCHANDISE—top-speed change-overs that permit the style changes necessary for volume sales! Install OGA or OTA machines and

you *safely* invest in equipment of *proven* performance; why, then, *risk on experiment?*

NOW, with new, exclusive refinements and added operating range OGA and OTA machines are your soundest investment in equipment.

● Investigate the all-new 32" diameter machines to produce coarser gauge goods as well as the finer gauges usually made on smaller diameter machines.

ORDNANCE GAUGE CO.
Amber & Hagert Sts.
Philadelphia 25, Pa.

SALES REPRESENTATIVE
MAC. M. ROTHKOPF
317 Bushwick Ave., Brooklyn, N.Y.

OGA OTA

ORDNANCE GAUGE CIRCULAR, FULLY AUTOMATIC KNITTING MACHINES

HAE-OG197-256

BENJAMIN BOOTH COMPANY, the originators of STRIP-O-MATIC card clothing, manufacturers of a complete line of quality card clothing

ANNOUNCE

SUPR-O-TAPE

THE PROVEN FABRIC CONDENSER TAPE

NOTE THESE ADVANTAGES:

- LONG LIFE
- NO STRETCH
- HIGH STRENGTH
- NO SURFACE CRACKING
- NEEDS NO OIL
- HOLDS SQUARE EDGES INDEFINITELY
- CAN BE MADE ENDLESS IN ANY LENGTH
- LOW IN COST

Write the Benjamin Booth Company today for full details and prices.

BENJAMIN BOOTH COMPANY,
ALLEGHENY & JANNEY STS., PHILA., PA.

Booth

motors, and (3) standard motors in the new NEMA frames. (A-69)

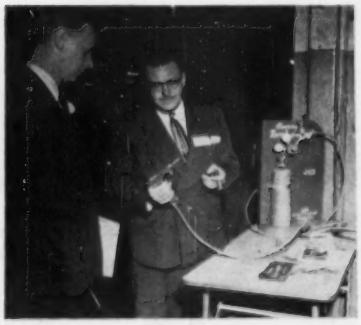
Lighting improvements featured by Sylvania Electric Products, Inc., Salem, Mass., included an 8-ft. Rapid Start fluorescent lamp with an initial output of 7,000 lumens; plastic fixtures that permit 25% upward light; and an industrial lamp with vertical filaments that produce 6 to 15% more light. (A-70)

Heat-resistant leather packing for hydraulic and pneumatic applications was shown by J. E. Rhoads & Sons, Wilmington, Del. Tannate leather is custom-impregnated for different pressures and is accurately molded to fit snugly against shafts and cylinder walls. The packing has a low break-away friction and provides an effective seal against hydraulic oils and other liquids and greases. (A-71)

An improved insulation material for installation under heavy machinery was shown by Felters Co., New York, N. Y. The material, known as Type T, is said to be especially useful under spinning and twisting frames where alignment is a problem. (A-72)

A skidproof coating for steps, catwalks, ramps, and oily floors was shown by Gates Engineering Co., Wilmington, Del. To apply the liquid neoprene product, you put on two coats; and while the second coat is still wet, you cover the surface completely with grit. Then a top coat of liquid neoprene is put on. (A-73)

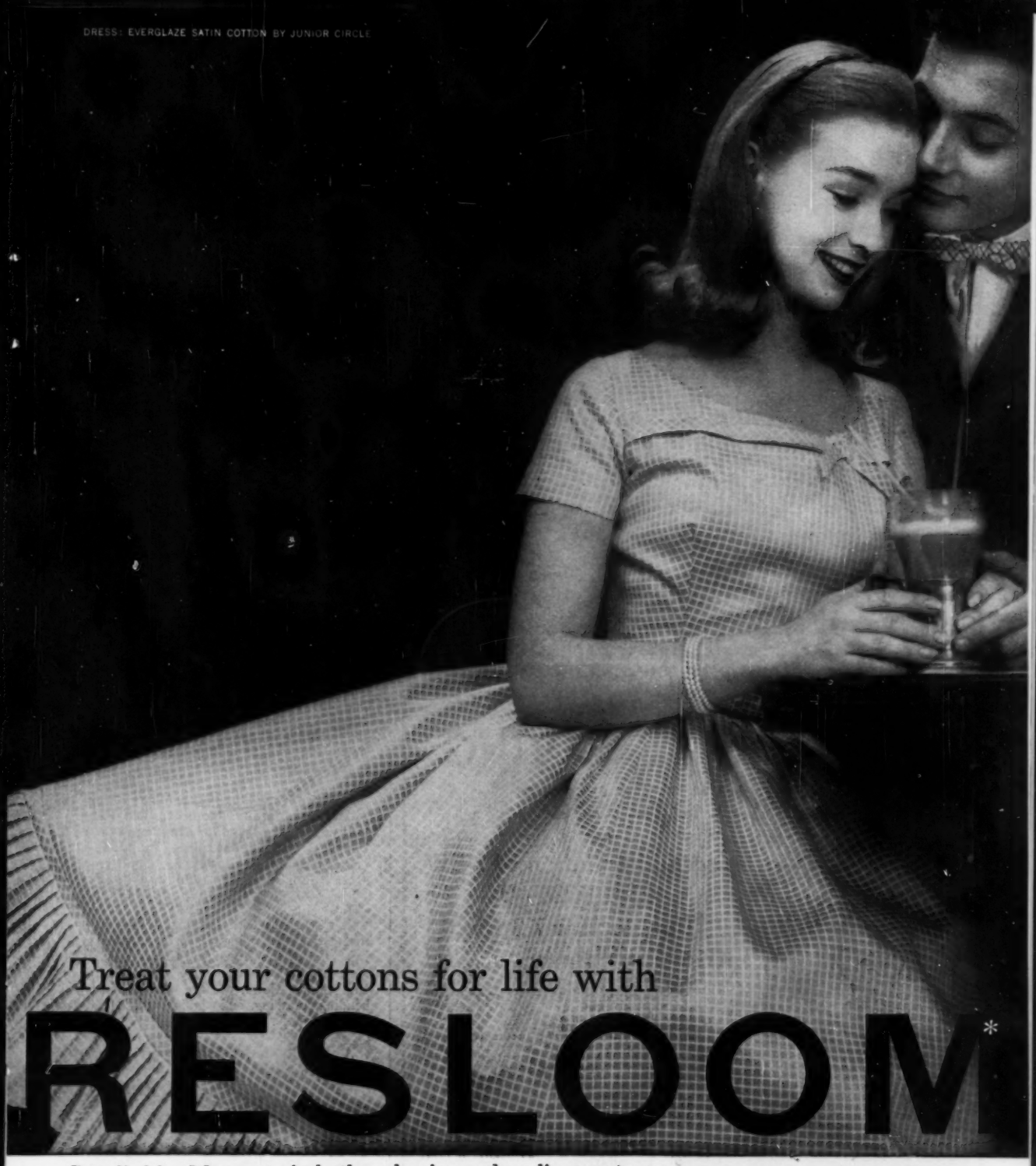
A lift truck with automatic transmission was operated by The Yale & Towne Mfg. Co., Philadelphia, Pa. The truck is also equipped with inching control. A wide range of capacities from 3,000 to 8,000 lbs. assures a model for most handling needs. (A-74)



Trigger-Action Torch

An air-acetylene torch that's fully automatic was demonstrated by Velocity Power Tool Co., Pittsburgh, Pa. You just pull the trigger, and the torch lights up; release the trigger, and it's out.

The torch is light in weight, and it's easy to handle with one hand because it has a pistol grip. The adjustable regulator feeds gas at the correct pressure. The



Treat your cottons for life with RESLOOM*

Supplied by Monsanto in both melamine and cyclic urea types

MONSANTO

*RESLOOM: REG. U. S. PAT. OFF.

For finishes requiring a melamine resin, top results are obtained with Resloom HP or M-75. For finishes requiring a cyclic-urea formaldehyde, Resloom E-50 meets the most exacting standards.

Still other finishes are obtained with outstanding success by using a "blend" of the two types.

All of Monsanto's Resloom textile resins have this in common: They impart a finish that does not wash out. Treated cottons keep their dimensional stability and wrinkle recovery for life.

The reason is simple. Resloom resins do more than coat the surface. They are deposited inside absorbent fibers where they actually modify fiber characteristics.

Get impartial counsel. A Monsanto representative will be glad to work with you on your cotton finishing problems. Write Monsanto Chemical Company, Plastics Division, Room 1048, Springfield 2, Massachusetts.

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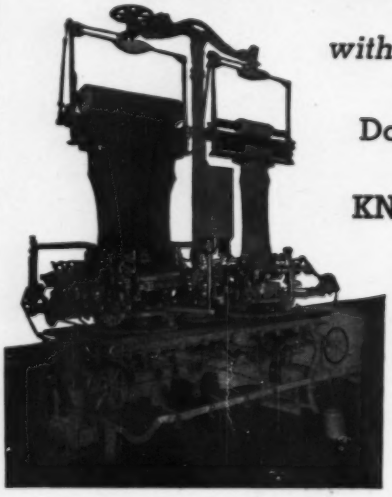
ACTUAL MILL OPERATIONS SHOW

BIG WEEKLY SAVING PER OPERATOR



with installation of NEW
TOMPKINS D-2
Double Head Spring Needle
KNITTING MACHINE

New stop motions and furnishing wheels provide the profitable answer to reducing cloth imperfections and needle breakage—imperfections are caught before they get into the cloth! Actual installations are showing remarkable savings in knitting various types of material. SOME MILLS CLAIM THEY HAVE CUT PRODUCTION COSTS IN HALF . . . OTHERS REPORT SAVINGS UP TO $800.00 PER WEEK PER OPERATOR, over old machines. All this PLUS AN IMPROVEMENT IN FABRIC QUALITY!

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OTHER TOMPKINS MACHINES
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TOMPKINS BROS. CO. • Syracuse 4, N. Y.

gas flows only when the trigger is pulled. There's no flame when the trigger is released. The torch will operate from your present acetylene tanks. **(A-75)**

Gulf Oil Corp., Pittsburgh, Pa., showed a multipurpose lithium-base grease. Only one grease has to be stocked during summer and winter. The grease does not drip and cuts off clean at the nozzle when it is applied to grease fittings. **(A-76)**

A floor machine for scrubbing, waxing, polishing, and light sanding was featured by Vestal, Inc., St. Louis, Mo. The machine offers quiet operation, uniform contact between the brush and the floor, easy handling, and a safety switch. **(A-77)**

Emergency Light

An emergency lighting unit that lights automatically the moment regular lights fail was shown by Carpenter Mfg. Co., Boston, Mass. The standard twin-head unit has 25-w. sealed-beam lamps.

The lamp is powered by an enclosed 6-v. battery and burns approximately 5 hrs. The lamp head is 5¾ ins. in diameter. The cabinet size is 8x13x17 ins. **(A-78)**

A tank-type vacuum cleaner was shown by Ideal Industries, Inc., Sycamore, Ill. The cleaner has a 1½-hp. motor and 5-in. wheels. The two front wheels swivel so that the cleaner can be pulled by the air hose. The lid has no clamps or bolts to loosen; so it's easy to lift off. The vacuum action seals the lid as soon as the motor is started. **(A-79)**

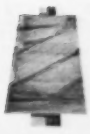
An oil and grease absorbent called Hi-Dri was shown by Waverly Petroleum Products Co., Philadelphia, Pa. The material eliminates slippery floors and reduces flash-fire hazard. **(A-80)**

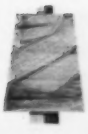
A new chain with the lug welded so that twice the welding area is engaged was shown by American Chain Div., American Chain & Cable Co., Inc., Bridgeport, Conn. The weld resists bending, breaking, and kinking. **(A-81)**

A resilient, cross-ribbed neoprene vibration pad with alternately raised ribs called Shear-Flex was shown by Vibration Mountings, Inc., Elmhurst, N. Y. Light loads are supported on the raised ribs; heavier loads rest on the total ribber surface. Maximum capacity is 60 lbs. per sq. in. **(A-82)**

A liquid neoprene for sealing roofs covered with composition materials was offered by Gates Engineering Co., Inc., Wilmington, Del. The material is mopped over the existing roof and bonds the shingles in place. It also stops curling and loosening of shingles. The coating is fire resistant and is available in 1- and

look





into the future with JETSPUN®

JETSPUN solution-dyed viscose yarn offers styling and performance qualities never before available. • JETSPUN presents unlimited sales and profit opportunities. • JETSPUN is remarkably versatile... ranging in use from the finest fashions in ready-to-wear, home furnishing fabrics to durable auto seat covers. • That is why JETSPUN is succeeding in new fields all the time—being developed into new and exciting fabrics every day.

Consider these distinctive JETSPUN features— what they can do for you:

1. JETSPUN is available in a wide range of colors, running from pastels to brilliant accent shades.
2. JETSPUN is colorfast to light, laundering, perspiration, crocking, dry cleaning, chlorine bleach, peroxide bleach, and gas fading.
3. JETSPUN offers the extra advantage of long wear at low cost found in viscose yarns.

American Enka stands ready to advise and assist you with the development of JETSPUN fabrics for new end uses. Why not call us today?

American **enka** Corporation • 206 Madison Avenue, New York 16, New York

5-gal. cans in aluminum, red, green, gray, and slate-black colors. (A-83)

Centralized-lubrication systems that accurately proportion the oil or grease discharged were displayed by Trabon Engineering Corp., Cleveland, Ohio. The correct volume of lubricant is fed to each bearing on a machine. (A-84)

Three liquid compounds for use in steam cleaners were shown by Hypressure Jenny Div., Homestead Valve Mfg. Co., Coraopolis, Pa. One compound is for medium- and light-duty cleaning, the second is for heavy-duty cleaning, and the third product is for cleaning the coils to prevent clogging. (A-85)

A coupling link for chains was shown by Columbus McKinnon Chain Corp., Tonawanda, N. Y. The link is for adding hooks and additional chains to hoists and similar applications. The pin for the link locks the two parts together without peening or welding. Consequently, the link is easily removed when necessary. (A-86)

A coating to protect metal surfaces from rust and corrosion from salt water, chemical fumes, acids, solvents, and alkalis was shown by Enterprise Paint Mfg. Co., Chicago, Ill. The material is applied in one-coat thicknesses of 12 to 25 mils. It will not soften under heat or pull away from sharp edges or bolt heads. The coating is available in several colors. (A-87)

A special instrument oil said to be applicable to testing and control instruments in textile plants was shown by Gulf Oil Corp., Pittsburgh, Pa. The oil is more expensive than conventional lubricating oils but is nonspreading, nongumming, noncorrosive, and resists rust. (A-88)

Motors in NEMA Frames 182 through 256 U. in 1 to 10 hp. were shown by Wagner Electric Corp., St. Louis, Mo. The motors are in the following design: ribbed frame, fan-cooled; smooth frame, fan-cooled; and smooth frame, nonventilated. (A-89)

A steam-jet cleaner that cleans with dry steam was demonstrated by Pantex Mfg. Corp., Pawtucket, R. I. The cleaner results in a minimum of moisture, and there's no flooding of working areas. The machine is self-contained and portable so that it can be used to clean in production departments of a plant. (A-90)

Your ¼-in. electric drill can be converted into a fast power hammer with a drill hammer shown by Rawlplug Co., Inc., New York, N. Y. When the point of the drill hammer contacts masonry, the automatic clutch engages and the hammer goes into action. Each revolution of the drill becomes a hammer blow. (A-91)

Two types of mountings to control machine vibration were demonstrated by Korfund Co., Inc., Long Island City, N. Y. One mounting is a pad that isolates shock and noise. The other mounting has a load-distributing steel top plate permanently bonded to a pad. (A-92)

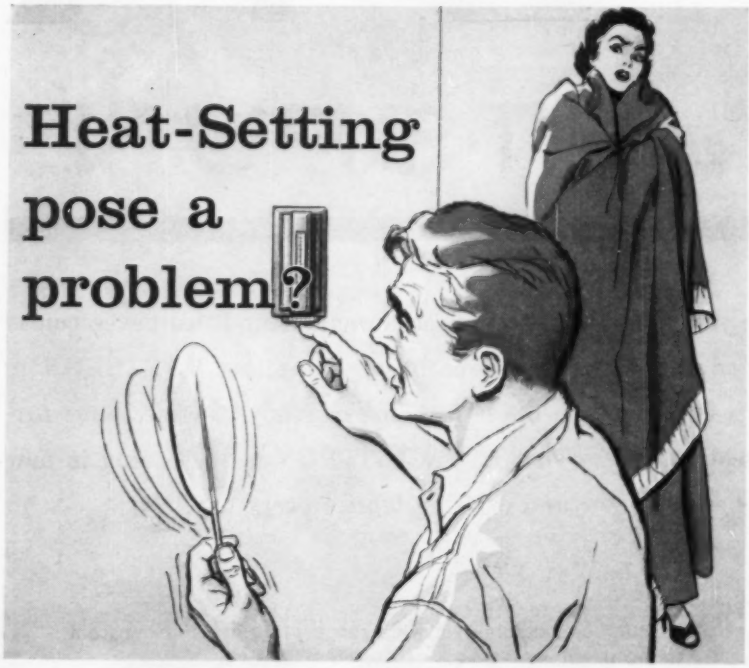
A variable-speed motor was shown by U. S. Electrical Motors, Inc., Los Angeles, Calif. The entire mechanism is completely enclosed in a housing with only a shaft protruding. Ratios vary from 2 to 16 and from 380 to 3,940. (A-93)

A portable power-vise stand for cutting, reaming, and turning on fittings was shown by The Oster Mfg. Co., Cleveland, Ohio. A power drive for threading pipe is also furnished with the stand. The price is $265. (A-94)

Lining for Tanks

An inexpensive and durable lining for storage water heaters, tanks, and similar vessels was shown by The Patterson-Kelley Co., Inc., East Stroudsburg, Pa. The material prevents corrosion failures that lead to replacing plain-steel vessels.

The lining is easy to apply and is available in 95-lb. moistureproof bags. Only water is needed to complete the job. (A-95)



SUPRANYL Withstands Heat-Setting
. . . yet is Easy to Remove!

Try this for size — Supranyl, Stein Hall's miracle size for nylon warps. It's unaffected by heat — and still it can be readily removed in your scouring bath. But that's not all! Supranyl, because of its unsurpassed affinity and adhesion to nylon yarns, offers you maximum protection against abrasion in weaving.

Find out now how Supranyl can save you many dollars in your operation. It requires no additives . . . stands greater dilution . . . and your initial cost is lower. Write today for more information, Textile Department TW-3.

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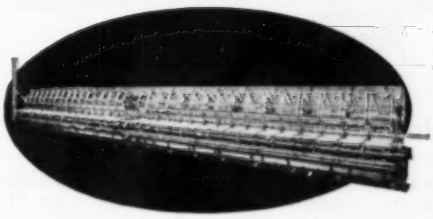
Established 1866

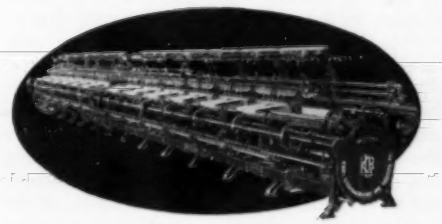
Machinery for the Textile Industry

by Lieberknecht



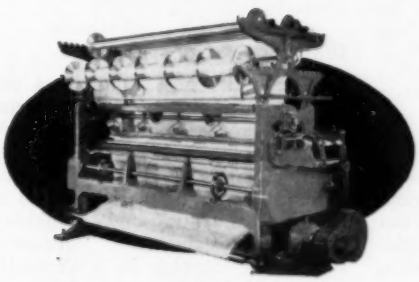
THE LIEBERKNECHT 32 SECTION HIGH SPEED AUTOMATIC... heading a complete line of full-fashioned machinery for hosiery manufacturers. There is a machine for every manufacturer according to his needs, wants and desires of his customers, from 39 gauge to the *predominant 60 GAUGE* and the finer 66 and 75 GAUGE. Non-run attachment is available on all machines up to and including 60 gauge.

For those manufacturers whose customers demand the finest, many mill operators agree that the Lieberknecht machine has been the answer to improving their competitive position because of the savings realized in higher production of fine quality hosiery.

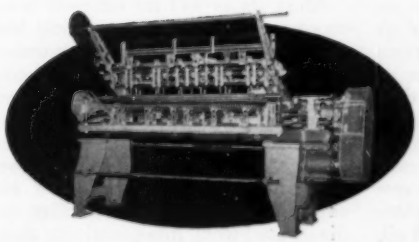


THE FULL-FASHIONED SWEATER MACHINE . . . built entirely new from the floor up and designed expressly for sweater and outerwear manufacture. Incorporated in the design of this machine are many extra features . . . Central Control for convenience . . . V-neck Attachment for versatility . . . Filling-in Points for finer appearance . . . *and* many other profit promising "extras".

The standard machine is built in 21 gauge 12 sections with 30 inch needle-bars. Other gauges and sizes are available to special order.



THE RASCHEL-TYPE WARP KNITTER . . . lending itself to a limitless range of fabrics and designs, may be geared to knit any kind, quality, size or denier of yarn. Among the many fabrics produced are girdle fabric, tulle, laces, netting, carpets and many specialities. This ruggedly built machine is capable of knitting 100 inch fabrics at high speeds. It is available in all gauges, single or double needle bar, and with from 2 to 8 guide bars.



THE QUILTING MACHINE . . . a high-speed, multiple-needle machine for stitching together all types of quilting fabrics available in 47, 58 or 94 inch width, with other sizes to special order. This machine is widely used for linings, robes, pads and a host of other articles where quilted fabrics are desired. A variety of attractive designs can be produced.

WRITE TODAY for detailed information. We have available specially prepared brochures on each of the four lines of Lieberknecht machinery. Simply drop us a line and specify the booklet or booklets you want.

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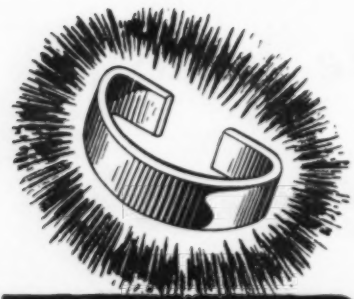
Auto-Welt Full-Fashioned Hosiery Machines • Full-Fashioned Sweater Knitting Machines • Warp Knitting Machines Quilting Machines



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OUR SPECIALTY!

Our specialty is making Dary ring travelers — an item well and favorably known to the textile trade for more than half a century. Though times change, we at Dary hold to one course without deviation. We continue to serve, by pursuing our specialty.

When you need ring travelers, call on our experience to aid your choice. Consult your friendly Dary representative!

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MILL MAINTENANCE

Maintenance Practices for Stainless Steel

Many people think of stainless steel as a material that requires no maintenance. However, this thinking is not true; and stainless steel either misapplied or mishandled can be one of the most expensive forms of maintenance in a mill.

Stainless steel resists attack under many corrosive conditions through naturally formed oxide films. The extent to which these films resist attack depends on the physical condition of the film itself.

If the film is weakened because of the presence of imbedded foreign substances, premature failures may develop under conditions where the steel would normally offer permanent resistance.

Keep Equipment Clean

Cleaning is the most practical way to lengthen the life of stainless-steel equipment used in scouring, bleaching, dyeing, etc. Cleaning should usually be done after the fabricating operations where lubricating or cutting compounds are used.

After the parts have been in service, they should be cleaned when they are exposed to atmospheric conditions. Lubricants and abrasives should be removed after they have served their purpose. If they are left on most stainless steels, they are a menace to maximum corrosion resistance. Greases and oils are easily removed in vapor degreasers, such as trichloroethylene or perchloroethylene. Greases and oils can also be removed easily by washing or rubbing down the stainless surfaces with organic solvents such as carbon tetrachloride, kerosene, gasoline, and other materials.

Remove Stubborn Stains

But if abrasives, buffing compounds, or dirt are present in the grease or oil, these substances may not be completely removed by the organic solvents. In this instance, the degreasing operation should be followed by: (1) washing with warm soapy water, (2) rinsing in clear running water, and (3) drying immediately with a current of dry air or with a soft cloth.

Stainless steel that becomes contaminated in service from atmospheric exposure is cleaned best with a soft cloth that has been dampened in warm soapy water. Follow this procedure by rinsing in clear water and drying either by air or with a soft absorbent cloth. Don't use steel wool, coarse fabrics, abrasives, or abrasive polishing solutions.

Drastic Cleaning Methods

Where dirt has accumulated excessively and resulted in light rust marks or stains, the surface can be cleaned effectively by: (1) moistening a soft cloth with a 10% solution of sodium citrate, (2) sprinkling on a light layer of whiting, and (3) rubbing the rust or stain marks vigorously. Follow the cleaning by a thorough rinsing and drying.

Most stains will be removed from stainless steel by these methods, but there may be some foreign substances present that are not affected by them. These substances may have resulted from fabricating operations such as forming, machining, or blasting. Other damage may have resulted from mechanical cleaning operations, for example, cleaning with wire brushes, ordinary steel wool, iron-containing abrasives, etc.

Under these conditions, a more-drastic cleaning solution must be used. Nitric acid, which rapidly attacks most other metals, has little or no effect on stainless steel. Therefore, this highly oxidizing acid is a good cleaning agent.

The practice of cleaning stainless-steel parts with nitric-acid solution is

CONTINUED ON PAGE 212

caustic soda—

which strength should you buy?

Here are the facts to help you decide which saves you more—50% or 73%

Can you save by switching from 50 to 73% liquid caustic? Your answer will depend on:

1. Your caustic soda freight rate.
2. Your facilities for handling caustic.
3. The amount of caustic you use.

Advantages of 73% liquid

1. With 73%, there is a substantial saving in freight charges. 63% less water is shipped per unit weight of dry caustic soda.
2. You will place fewer orders. This cuts down on your billing work.

Disadvantages of 73% liquid

1. It is priced $2.00 more per ton (dry basis) than 50% because of higher manufacturing costs.
2. If you store it as 73% liquid, you will need heated, nickel-clad steel storage tanks.
3. If you dilute 73% to 50% while unloading, you will need a cooler and other equipment. This represents a considerable investment which can be reduced if you have suitable equipment already on hand.

Use this table to see if you can save with 73%

Use the table at right to find your approximate saving on freight charges with 73% liquid caustic. The table balances two cost factors . . . lower freight charges and the higher initial price of 73% liquid caustic.

To estimate your yearly savings, multiply the figure in the right-hand column which applies to you by your annual consumption in tons (dry basis).

From these savings you will have to deduct the cost of equipment for diluting to 50% while unloading.

Freight rate per hundred weight in cents (including taxes)	*Net savings per ton (dry basis) in dollars*
5	minus 1.40
10	minus .80
15	minus .10
16	0
20	.60
25	1.20
30	1.80
35	2.40
40	3.00
45	3.70

HERE'S HELP—WITHOUT COST

You gain much by choosing the *right* strength for your conditions. In coming to a decision, why not give yourself the advantage of unbiased expert technical help? A call to your nearest Hooker sales office puts at your disposal, without obligation, the experience gained in 50 years of supplying caustic soda to industry.

Your Hooker technical service man can show you what equipment you need for converting, and help you figure your exact savings. Why not phone or write him today at the nearest Hooker office?

* * *

"CAUSTIC SODA BUYER'S GUIDE" is the title of a new pocket-size booklet we will be glad to send you. Contains helpful facts on the economics of 50% and 73% solutions; other forms of caustic soda; capacities of tank cars and other containers; useful shipping information. Write for a copy.

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From the Salt of the Earth

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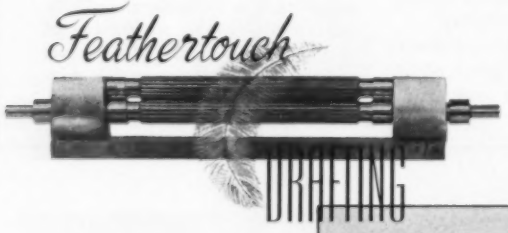
Ideal is the "Jet Propulsion" of Drawing

Ideal High Speed Ball Bearing Drawing Equipment* is as different from ordinary drawing equipment as a jet engine is from the propellor type. Like the jet, it provides better, safer, and smoother operation at approximately twice the speed of ordinary equipment. Here are some of the features which enable Ideal equipment to produce high quality drawing at speeds up to 450 feet per minute.

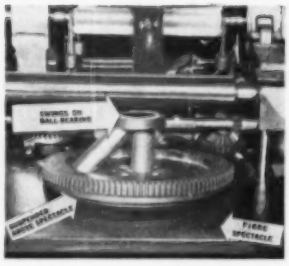
Ideal Ball Bearing Spacing Sections

(Pat.)

These are independent of the rolls . . . do not revolve . . . transmit no resistance . . . never wear to throw the rolls out of alignment . . . and provide free-floating top roll action which automatically evens out thick and thin places in the drawing sliver. They positively prevent cutting, bruising, or damage of any kind to stock.



Ideal High Speed Coiler Tube Mechanism



This is suspended above the spectacle by means of a ball bearing ring at the top and swings lightly and freely on this frictionless bearing. Ball bearing coiler shaft, studs, and upright shaft also contribute to smooth "jet propulsion" action at any speed you wish to attain. Fibre gears run noiselessly and dissipate heat.

New Ideal Knock-off Action

Stops the frame instantly at the first sign of a tube gear choke-up. Eliminates the fibre breakage and danger of machine damage caused by formation of hard masses of packed fibre.

You can get Ideal jet-like speed on new Ideal Frames or in replacements on your present frames. Write for full information today.

* Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

Ideal Industries, Inc.
Bessemer City, N. C.

"It costs twice as much if you don't install Stainless Steel equipment . . ."

SAYS ROANOKE MILLS COMPANY, ROANOKE RAPIDS, N. C.

At Roanoke Mills, the dye beams and dye kiers shown in the picture have been in continual service since 1947. They show no signs of wear because they are made from Stainless Steel. The Stainless is so light and bright that it is easy to detect dirt and dye stains—and it's just as easy to remove them with a water rinse.

Before they converted to Stainless, dyeing was done in iron kettles. The carding of dyed cotton is, of course, a much harder process than carding white cotton, for the dyed cotton emerges stiff and free of natural oil and waxes. Five iron tanks took about 60 hours of cleaning time every week, and many light shades could not be used because of color contamination. With the conversion to Stainless Steel equipment, there is no contamination now; dyed colors average 5% more brilliance and clean-up costs have been greatly reduced.

This is a typical Stainless Steel textile experience — lower cleaning costs, lower maintenance costs and higher quality production. Always consider Stainless Steel when planning new equipment. Always specify USS Stainless Steel to be sure of service-tested quality.

SEE The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • NATIONAL TUBE DIVISION, PITTSBURGH
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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS STAINLESS STEEL

SHEETS • STRIP • PLATES • PIPE • TUBES • WIRE
BARS • BILLETS • SPECIAL SECTIONS

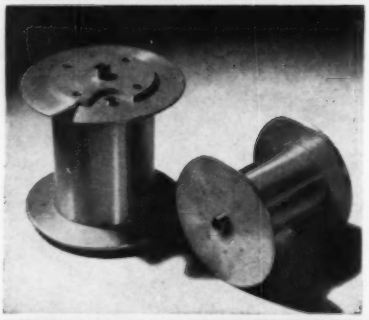
USS

6-431

UNITED STATES STEEL

FOR THE FIRST TIME
AT A
MODERATE PRICE...

A ONE-PIECE
ALUMINUM
BOBBIN*



One-piece aluminum take-up and transfer take-up bobbins

At last, a strong, durable bobbin made by brazing aluminum heads to an aluminum barrel. The brazing forms a one-piece bobbin with no cracks or possible openings to trap yarn.

This brand new bobbin—as strong as any bobbin on the market—will withstand the tremendous pressures of Helanca or other continuous filament nylon yarns. In tests, this bobbin has withstood pressures far greater than any to be found in normal usage. In usage there has yet to be a failure. This bobbin has been tried, approved, and purchased by leading throwsters and processors of Helanca, as well as other continuous filament nylon.

B W MACK

*Pat. App. for

ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN, PENNSYLVANIA

known as passivation or immunizing. Passivation denotes practically complete resistance of stainless steel to this otherwise highly corrosive material. The essential purpose of passivation is to obtain as nearly as possible a chemically clean surface.

Use passivation only as a finishing operation. Consequently, remove scale, dirt, grease, oil, drawing or forming compounds, and other similar substances with other methods. This practice will prevent unnecessary contamination of the passivating solution. Wash the treated parts in clean running water to completely remove all traces of acid.

Another common cause of difficulty with stainless steel involves the use of dissimilar metals. Tanks holding acid, particularly sulfuric, are most likely to react to this problem. The oxide that develops, which is actually the substance that protects stainless steel from corrosion, is often broken down.

How To Passivate

Carefully follow the following rules to protect any stainless steel where acid is used:

1. Clean the tank thoroughly before you fill it with acid. Passivate all surfaces with a 20% nitric-acid solution. Flush with water, and permit all surfaces to dry thoroughly in air.

2. For the first month of service, inhibit the acid bath by adding Calgon; use ½% Calgon, based on the weight of the concentrated sulfuric acid. Reduce the Calgon inhibitor to one-half of this amount the second month. Then discontinue the use of the Calgon.

3. Twice a week during the first two-month period, drain the tank, flush it thoroughly, wash it with soap and water, flush it again, allow it to dry in the air, and then inspect it. Polish any corroding areas with No. 180-grit aluminum-oxide abrasive. Then passivate the area. Flush the tank thoroughly and follow by air drying to oxidize the surface.

4. If any areas fail to develop immunity after this treatment, do not use the tank. Call the manufacturer.

5. After the two-month breaking-in period, and throughout the life of the equipment, drain the tank, wash and flush it, and inspect it at least once each week. If you find any corrosion that will not respond to polishing and passivating, investigate the condition immediately to determine and eliminate the cause. Corrosion that is allowed to start will spread to areas previously capable of resisting attack.

6. Some of the more-common causes of failure to immunize stainless-steel surfaces are:

a. Higher concentration of acid than is recommended for the stainless steel being used

b. Chemicals not recommended to be used with the stainless steel employed

c. Harmful contaminants that may be in the water supply; salt, for example

d. Dissimilar metals in the tank and piping

e. Leakage of currents from electric circuits

f. Areas in which carbon precipitation is excessive, as a result of faulty manufacture of fabrication

g. Inadequate initial passivation of surfaces, or failure to passivate after subsequent removals of oxide film

h. Permitting acid or chloride solutions to dry on surfaces

i. Improper cleaning

James H. Hunter, James Hunter Machine Co.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 152

Lubricant for Picker Rod

A lubricant for loom picker rods that eliminates dripping oil, excessive friction, overheating, and frequent loom stops has been developed by Garland Mfg. Co., Water St., Saco, Me.

The lubricant comes in a squeeze tube and is equipped with a plastic spreader that screws on the tube. To lubricate a picker rod, you place the applicator on the rod, squeeze the tube gently, and move the tube and applicator along the rod. A thin, even film of grease covers the rod surface. The lubricant has the correct amount of body to cling to the rod.

The lubricant is furnished in packages of 25 tubes complete with applicators at a cost of 80¢ per tube. In quantities of over 100 tubes, the cost is 75¢ per tube.

Circle T-15 on Reader-Service Card

Armstrong DK-149 Press Roll Covering has the high-friction surface needed to maintain selvage-to-selvage tension on fabric.

REDUCE FABRIC CREASING

–with this resilient press roll covering

You can minimize creasing of even the most delicate fabrics by using Armstrong DK-149 Press Roll Covering. This covering has just the right combination of resilience and friction to hold the cloth snugly against the full width of the take-up roll. It maintains take-up tension firmly and evenly, reducing the risk of creases building up on the cloth.

DK-149's resilience is permanent, too, because this sponged synthetic rubber covering is reinforced with cork particles. It won't pack down or develop "high spots," even after years of service.

Another important feature: despite its firm grip, the finely textured surface of DK-149 won't mark fabrics.

DK-149 comes in handy ribbon form for quick application to the roll. Your Armstrong man will be glad to help you set up a test on your own looms.

For more information about DK-149, send for our new booklet, "Armstrong Loom Supplies." Address Armstrong Cork Company, Industrial Div., 6903 Dauphin St., Lancaster, Pennsylvania.

Armstrong LOOM SUPPLIES

. . . used wherever performance counts

LOOM CLUTCH DISCS AND INSERTS . TAKE-UP ROLL COVERINGS . LOOM BRAKE AND LET-OFF STRIPS . TEMPLE ROLL COVERINGS

For higher-quality bleaching...

Du Pont announces a new J-Box

for new continuous peroxide bleaching systems or...

for modernization of existing installations

New design features of J-BOX give you:

1. **HIGHER QUALITY**—Chances for mechanical damage are reduced since cloth handling is reduced to a single draw roll and a simplified piling mechanism.
2. **HIGHER EFFICIENCY**—Greater, more uniform heating of cloth, made possible by new-type heating chamber.
3. **GREATER ECONOMY**—Simplified design permits easy and economical installation in new systems or replacement in existing systems.
4. **LOWER MAINTENANCE COSTS**—With the new J-Box, rope systems have fewer moving parts. Steam distributors and cloth heaters are simplified. In open-width systems, the draw roll is often the only moving part in the J-Box.

DU PONT'S new compact one-step single-stage peroxide system enables you to maintain present production levels with half the equipment, half the floor space . . . or double production without additional equipment. Cloth distortion and abrasion from handling are minimized, and savings of up to 50% in labor, steam, water and power are quickly realized. And all this is backed up by readily available Du Pont Customer Service.

For complete information on this new Du Pont J-Box, call the Du Pont technical representative nearest you.

Du Pont does not build or sell bleaching equipment. New-type J-Boxes can be obtained from a number of leading equipment manufacturers.

E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware

DU PONT PEROXIDES

ALBONE® hydrogen peroxide, 35% and 50%

PERDOX® sodium borate perhydrate

SOLOZONE® sodium peroxide

Sodium perborate tetrahydrate

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

IN CHARLOTTE
Call J. L. Moore
FRanklin 5-5561

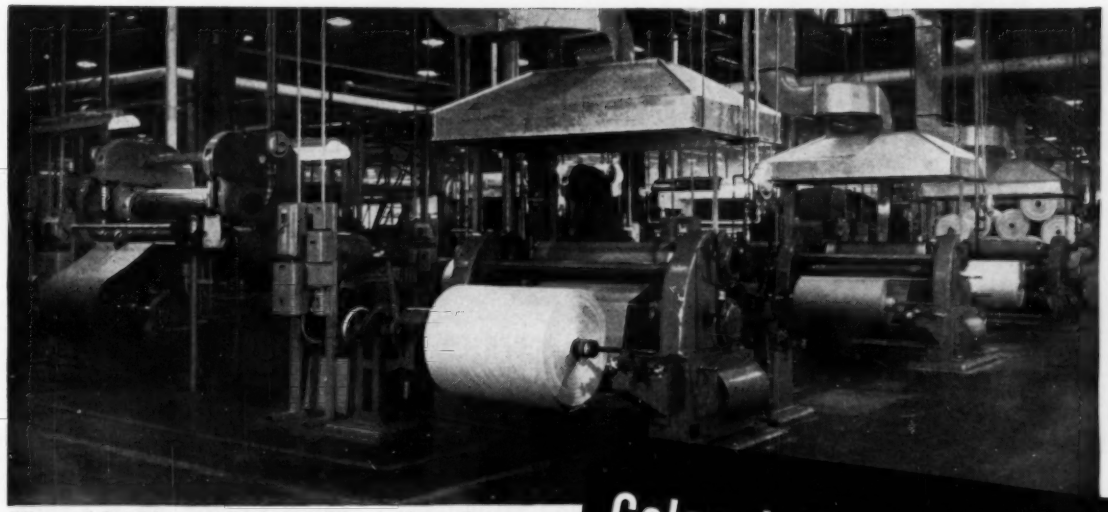
IN BOSTON
Call M. H. Rowe
HAncock 6-1714

IN NEW YORK
Call R. A. Secord
LOngacre 3-6440

IN PHILADELPHIA
Call G. A. Lunger
KIngsley 5-1900

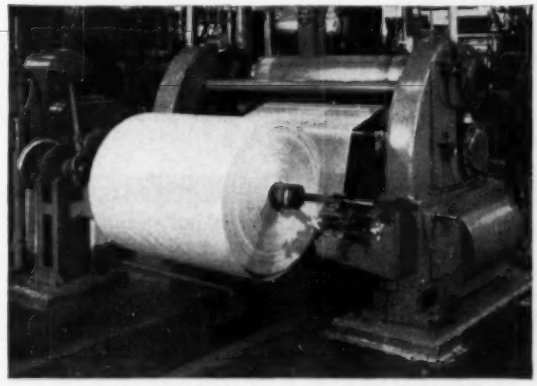
Call

these Du Pont textile specialists. They can give you expert help with any immediate bleaching problem. No obligation.

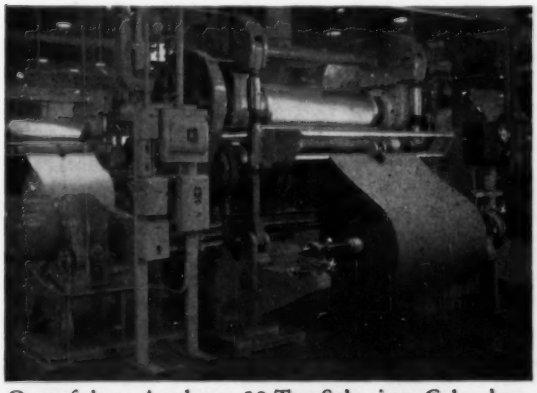


View of finishing operation at The Springs Cotton Mills, Grace Bleachery Division showing Appleton Machine Company 20 Ton Embossers and 50 Ton Schreiner Calenders.

Colonel Elliott Springs Chooses Appleton



One of three Appleton 20 Ton Embossers in use at The Springs Cotton Mills, Grace Bleachery Division.



One of three Appleton 50 Ton Schreiner Calenders specially adapted for everglaze finishes at Springs Cotton Mills, Grace Bleachery Division.

The uncommon elegance of Springmaid sheets can be attributed to Colonel Elliott Springs' shrewd judgment of textile machinery.

According to a trade journal article, the famous Springs Cotton Mills owner demands equipment that meets these requirements:

1—It must be modern.
2—It must be well made.
3—It must be the best available.

There never was a better time to invest in efficient equipment. If you would like to own the finest embossers or calenders in the industry, write or call an Appleton representative today. He will gladly analyze your needs, *without obligation.*

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

only a complete line answers all of your equipment requirements

DARNELL

offers

OVER 4000 TYPES OF CASTERS & WHEELS FOR EVERY USE!

All types of rubber treads—soft, medium and hard—for smooth operation on all kinds of floors. Featuring Neoprene rubber treads - resistant to oxidation, oils and waxes as well as being unaffected by most chemicals - expertly compounded to Darnell standards.

All casters, whether steel or rubber tread, available in swivel and stationary models with various top plates, stems and fittings for any type application.

Free Darnell Manual

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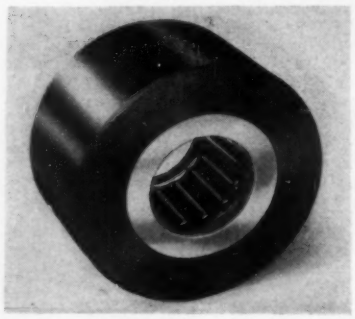
60 WALKER STREET, NEW YORK 13, NEW YORK
38 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS



Cam Follower for Looms

A cam-follower assembly featuring a molded roll of nylon composition impregnated with graphite has been developed by George E. Glentimack Co., Inc., North Attleboro, Mass. The assembly is designed to reduce frictional drag to a minimum.

Antifriction bearings and felt seals are used on the rolls to simplify lubrication. The assembly can be furnished complete, with the roll, or with the stud.

Circle T-16 on Reader-Service Card

Pneumatic Clearer

A pneumatic-clearer system for spinning, made by Nippon Spindle Mfg. Co., Japan, has been announced for the United States by Edward S. Rudnick, Olympia Bldg., New Bedford, Mass., exclusive U. S. and Canadian representative.

Called Pneumaniez, the system can be used on cotton, woolen, or worsted frames. Either central or individual collection boxes, which house a single-unit motor and fan, are available. The boxes have extra storage space for sliver and roving waste.

Chief advantage is said to be in the design of the collection tube that has a pear or tear-drop cross section tapered to give equal suction at the orifice. The internal surface is designed to prevent eddy currents of air.

The tube is held in place by springs that make it easy to disassemble for cleaning. Space between the front fluted roll is adjustable. Rubber-hose connections and hard-rubber ends on the tube can be easily removed for cleaning.

Circle T-17 on Reader-Service Card

You-Build-It Shelves

Steel shelving to be put together in your own plant is being manufactured by Borroughs Mfg. Co., 3002 N. Burdick St., Kalamazoo, Mich. The shelving is hooked in slots in one-piece closed uprights, and no bolts are needed. Shelves can be fitted to any position needed.

Circle T-18 on Reader-Service Card

Fiberglas Truck Bodies

Fiberglas truck bodies framed with metal tubing are not affected by oil or most chemicals. They are used to handle yarn and cloth in every processing department. Hot water or steam is used to clean them. The manufacturer is G. B. Lewis Co., 426 Montgomery St., Watertown, Wis.

Circle T-19 on Reader-Service Card

Weigh Cotton on a Crane

A scale manufactured by Hydroway Scales, Inc., 20,624 W. Eight Mile Rd., Detroit 19, Mich., weighs materials while they are being loaded by a crane or hoist. The scale is said to be able to weigh bales of cotton on a hoist as it is being unloaded from boxcars.

Circle T-20 on Reader-Service Card

Small Steam Boiler

A compact 50-hp. steam generator that burns No. 4 oil has been developed by National U. S. Radiator Corp., Cyclotherm Div., Oswego 5, N. Y. The boiler operates at 80% efficiency and is said to cut fuel costs 30%. The boiler can be installed in 20 sq. ft. of floor area.

Circle T-21 on Reader-Service Card

Framing Stock for Racks

Improvements to its line of framing material have been made by Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill. Typical applications for the framing are shelving, racks, conveyor mounts, bins, carts, and dollies. A wrench and hacksaw are the only tools needed to assemble the finished products.

Circle T-22 on Reader-Service Card

Pipe-Threading Machine

A portable pipe- and bolt-threading machine that threads a 2-in. pipe in only 20 secs. has been introduced by Beaver Pipe Tools, Inc., Warren, Ohio. It takes just 12 secs. to thread a ½-in. pipe. An improved wrenchless chuck increases safety.

Circle T-23 on Reader-Service Card

CORN PRODUCTS REFINING COMPANY

presents

A COMPLETE LINE

of

STARCHES, GUMS & DEXTRINES

Highly recommended for their superior uniformity, stability and cleanliness

GLOBE® BRAND CORN STARCHES

Ideal where a thick boiling starch is required for use in homogenizers. Always uniform, always clean, Globe Pearl Corn Starches produce strong films, reducing breaks on the slasher and on the loom. For backfilling, Globe brand extra thick starches produce a smooth, lardy paste.

NEW TEN-O-FILM® STARCHES

A new line of starches which are gaining wide use where set-back is a factor in slashing. Ten-O-Film resists gelation when temperatures fall. Despite prolonged heating and circulating, these starches maintain their viscosity, provide high film strength. Cooks quickly, desizes readily.

EAGLE® BRAND CORN STARCHES

For warp sizing carded and combed yarns. These thin-boiling starches produce a uniform size mixture which penetrates the yarn evenly. Where you want more weight of size, or thicker size film, try an Eagle brand starch. Available in a full range of fluidities to fit every need.

HERCULES BRAND CORN STARCHES

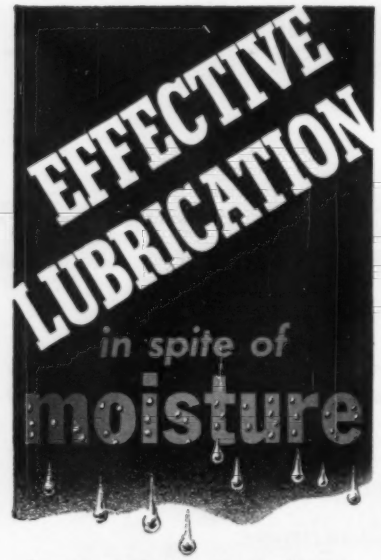
These oxidized starches produce a smooth, tough and clear film ideal in finishing.

GLOBE® GUMS AND DEXTRINES

Widely used in warp sizing for spun rayon, blends and synthetics; warps desize readily.

TAKE ADVANTAGE of our free technical service. Our lab and field experts will welcome the opportunity to help you with actual production problems. Write us today.

1906 • **50th ANNIVERSARY** • 1956
CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.



LUBRIPLATE Lubricants provide superior lubrication even in the presence of moisture and steam. They permit high speed operation, have exceedingly long life and do not break down. There is a LUBRIPLATE Lubricant, ranging from the lightest oils to the heaviest greases, to meet every requirement of the textile industry.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE

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MAKES CARS AND TRUCKS RUN BETTER AND LAST LONGER

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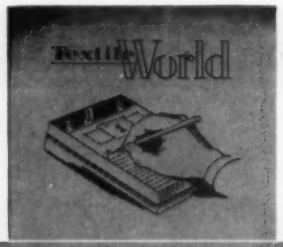
For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



CALENDAR

March

Conference on Electrical Application for the Textile Industry, American Institute of Electrical Engineers, Auditorium, Hightower Textile Building, Atlanta, Ga., March 1 & 2.

AATCC, Philadelphia Sect., Adelphia Hotel, Philadelphia, Pa., March 3.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., March 7.

Cotton Spinner-Breeder Conference, Charlotte Hotel, Charlotte, N. C., March 7 and 8.

ASTM, Committee D-13, spring meeting, Warwick Hotel, New York, N. Y., March 13 to 16.

AATCC, Hudson-Mohawk Sect., Johnstown Hotel, Johnstown, N. Y., March 16.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., March 16.

CATCC, Quebec Sect., McGill University, Montreal, Que., March 17.

Textile Research Institute, annual meeting, Hotel Commodore, New York, N. Y., March 22 and 23.

Southern Textile Methods and Standards Association, spring meeting, Clemson House, Clemson, S. C., March 22 & 23.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., March 23.

April

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., April 4.

American Society for Quality Control, spring meeting, Clemson House, Clemson S. C., April 5 & 6.

American Cotton Manufacturers Institure, annual meeting, Hollywood Beach Hotel, Hollywood, Fla., April 5 to 7.

AATCC, Piedmont Sect., Sir Walter Hotel, Raleigh, N. C., April 7.

Annual Packaging Conference, American Management Association, Atlantic City, N. J., April 9 to 11.

Alabama Cotton Manufacturers Association, annual convention, Buena Vista Hotel, Biloxi, Miss., April 11 to 13.

National Knitted Outerwear Association, Waldorf-Astoria Hotel, New York, N. Y., April 18 and 19.

Phi Psi Textile Fraternity, annual convention, Alabama Polytechnic Institute, Auburn, Ala., April 19 to 21.

AATCC, Philadelphia Sect., Benjamin Franklin Hotel, Philadelphia, Pa., April 20.

CATCC, Quebec Sect., annual meeting, Sheraton-Mt. Royal Hotel, Montreal, Que., April 20 & 21.

Textile Operating Executives of Georgia, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., April 21.

Cotton Manufacturers Association of Georgia, annual convention, Emerald Beach Hotel, Nassau, Bahama Islands, British West Indies, April 25 to 28.

AATCC, Northern New England Sect., Lowell Technological Institute, Lowell, Mass., April 27.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 27.

National Association of Hosiery Manufacturers, annual convention, Boca Raton Hotel and Club, Boca Raton, Fla., April 28 to May 1.

May

The Fiber Society, spring meeting, The Clemson House, Clemson, S. C., May 2 and 3.

Southeastern International Industrial Exposition, Lakewood Park, Atlanta, Ga., May 18 to 25.

Tufted Textile Manufacturers Association, annual meeting, Cavalier Hotel, Virginia Beach, Va., May 31 to June 2.

South Carolina Textile Mfrs. Assn., The Cloister, Sea Island, Ga., May 31 to June 2.

June

Materials Handling Institute Exposition of 1956, Public Auditorium, Cleveland, Ohio, June 5 to 8.

National Association of Hosiery Manufacturers and Hosiery Industry Conference, annual meeting, Hotel Roanoke, Roanoke, Va., June 14 to 16.

Southern Textile Association, annual convention, Mayview Manor and Green Park Hotel, Blowing Rock, N. C., June 21 to 23.

July

Gordon Research Conference on Textiles, Colby Junior College, New London, N. H., July 9 to 13.

September

The Fiber Society, fall meeting, Warwick, Hotel, New York, N. Y., Sept. 6 & 7.

AATCC, national convention, Waldorf-Astoria Hotel, New York, N. Y., Sept 10 to 12.

Combed Yarn Spinners Association, Cavalier Hotel, Virginia Beach, Va., Sept. 27 & 28.

October

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 1 to 5.

North Carolina Textile Manufacturers Association, annual meeting, The Carolina Hotel, Pinehurst, N. C., Oct. 10 to 12.

Textile Operating Executives of Georgia, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 13.

ASTM, Committee D-13, fall meeting, Warwick Hotel, New York, N. Y., Oct. 16 to 19.

International Knitting Machinery & Accessories Exhibition, Granby Halls, Leicester, England, October 17 to 27.

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SKF TENSION PULLEYS

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You are buying the finest products offered to the Textile Industry, along with the technical service of the men most experienced with textile bearing applications. For, from the introduction of the first self-aligning bearing, SKF has worked continuously to improve the machines, and ultimately the output of the entire Textile Industry. **SKF INDUSTRIES, INC.**, PHILADELPHIA 32, PA.— *manufacturers of* **SKF** *and* HESS-BRIGHT® *bearings.* 7614

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Whether your problem is protection or sales appeal Kennedy can find the answer. Plain or printed papers, plastics and foils of all descriptions—hand or machine work . . . regardless of the materials and methods involved, here is textile packaging to precisely fit your needs.

Send this coupon today and learn how Kennedy packaging can serve you.

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NEWS about SUPPLIERS

ALVEY CONVEYOR MFG. CO., St. Louis, Mo.—Has expanded its sales engineering and service office in the Greenville, S. C., area. The office will be known as the Easley-Burdette Agency and will be under the direction of Curran S. Easley and Luther D. Burdette. . . . **AMERICAN CYANAMID CO., INDUSTRIAL CHEMICALS DIV.**, New York, N. Y.—Has appointed Mead Board Sales, Inc., Lynchburg, Va., and Sonoco Products Co., Hartsville, S. C., as manufacturers and sales agents for Accopak pallets. The company has consolidated its research activities into a single division under the direction of Kenneth H. Klipstein. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has appointed C. Stuart Brown advertising manager. . . . **ATLANTIC STEEL CO.**, Atlanta, Ga.—Has elected William J. Wardlaw, Jr., and Ralph Williams to the board. . . . **CARBIDE & CARBON CHEMICALS CO., DIV. OF UNION CARBIDE & CARBON CORP.**, New York, N. Y.—Has named Victor J. Kremers to the Textile Fibers Dept. as a technical representative on Dynel. . . . **CLARK EQUIPMENT CO.**, Battle Creek, Mich. —Has named M. J. Drackett sales manager of the Attachments Section of the Industrial Truck Div. . . . **COLSON CORP.**, Elyria, Ohio—Has been named to distribute products manufactured by Structo System, Inc., Elyria. . . . **COLUMBIA-**

FOXBORO CO., Foxboro, Mass., is building a new instrument training center. The new building will accommodate 46 trainees. Norman A. Anderson and John B. Parkes, Jr., have been added to the training staff.

SOUTHERN CHEMICAL CORP., Pittsburgh, Pa.—Has appointed Martin G. Levens district sales manager in Philadelphia, Pa. . . . **H. E. CRAWFORD CO., INC.**, Kernersville, N. C.—Has named Roy D. Johnson field representative and service man for the Argyle knitter and attachments. . . . **DIAMOND ALKALI CO.**, Cleveland, Ohio—Has promoted Clayton M. Holt manager of chlorine and hydrogen sales and William L. McFadden to manager of caustic-soda sales. . . . **ENGINEERED PLASTICS, INC.**, Gibsonville, N. C.—Has appointed Rex P. Bennett representative in New Jersey and Pennsylvania. . . . **FOOD MACHINERY & CHEMICAL CORP.**, New York, N. Y.—Has appointed R. M. Hoyer district sales manager for Westvaco Chlor-Alkali Div. He will be located at the S. Charleston, W. Va., plant. . . . **GEIGY CHEMICAL CORP., GEIGY DYESTUFFS DIV.**, New York, N. Y.—Has retired Joseph S. Lange and Daniel P. Knowland. . . . **GENERAL ANILINE & FILM CORP., ANTARA CHEMICALS DIV.**, New York,

Haystack? No indeed! Smart buyers *know* the dependable way to find top-quality needles for felting, knitting, tufting or sewing is by calling . . . **THE TORRINGTON COMPANY.**

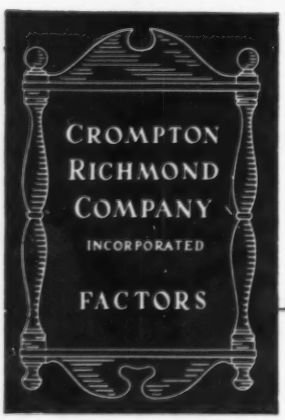
Torrington, Conn., U. S. A. Branches in New York, Philadelphia, Boston, Chicago, Greensboro, St. Louis. Pacific Coast Representative: E. G. Paules, Los Angeles

N. Y.—Has named Alfred P. Rimlinger export manager. . . . **GREENVILLE BELTING CO.**, Greenville, S. C.—Has changed its name to Schmidt Mfg. Co. of S. C. Oliver N. Walker has been named vice president in charge of sales. . . . **HERCULES POWDER CORP.**, Wilmington, Del.—Has appointed Fred K. Shankweiler to sales manager of coating materials for the Cellulose Products Dept. . . . **INTERNATIONAL SALT CO.**, Scranton, Pa.—Has named Howard E. Reith to its staff as a sales engineer. . . . **IVEY CHEMICAL CO., INC.**, Greenville, S. C.—Has named James Balloch sales manager. . . . **LUDELL MFG. CO.**, Milwaukee, Wis.—Has purchased the patents and rights to manufacture and sell the Bready systems of waste-heat recovery and hot-water heating. . . . **METAL FILM CO.**, New York, N. Y.—Has appointed Charles E. Wood sales representative for Chromeflex in North Carolina, South Carolina, and Virginia. . . . **MOISTURE REGISTER CO.**, Alhambra, Calif.—Has appointed Energy Controls, Inc., New York, N. Y., as manufacturer's representative in the middle Atlantic states for the complete Moisture Register line. . . **MORSE CHAIN CO.**, Ithaca, N. Y.—Has appointed Raymond H. Whitney Southeastern district manager with headquarters in Charlotte, N. C. . . . **NATIONAL STARCH PRODUCTS, INC.**, New York, N. Y.—Has named John D. Beggs to direct the sales of vinyl resins to paint and other protective-coatings

THOMAS A. FULTON (left) has been named sales manager for H. E. Crawford Co., Kernersville, N. C., and H. E. Crawford Mill Supply, High Point. M. H. P. MORAND (center) has been promoted to manager of coatings sales for Dow Chemical Co., Midland, Mich. L. G. URQUHART (right) has been named acting engineer for H. F. Livermore Corp., Boston, Mass.

A. N. McFARLANE (left) has been elected vice president and general sales manager of Corn Products Refining Co., New York, N. Y. FRANK E. NUTT (center) has been named sales promotion manager of Century Electric Co., St. Louis, Mo. ROBERT G. PERRIELLO (right) has been named Southern district sales manager for Warwick Chemical Co., Long Island City, N. Y.

Credit Tensile Strength



The stress and strain on working capital is greatest during peak payrolls and heavy raw material purchases . . . especially when selling periods are short, and production is necessarily slow.

That is when Crompton Factoring can do its greatest job for you . . . by turning all your receivables into cash as soon as you ship and as long as you keep shipping. Thus the flow of your capital is not only accelerated, but it is also unjeopardized; for we assume all credit risks and relieve you of all receivable bookkeeping as well as of the cost of collections.

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Glenn Building, Atlanta 1, Georgia

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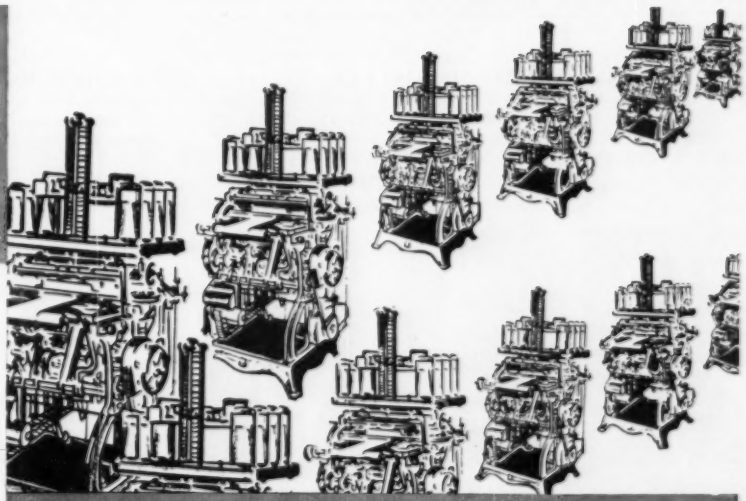
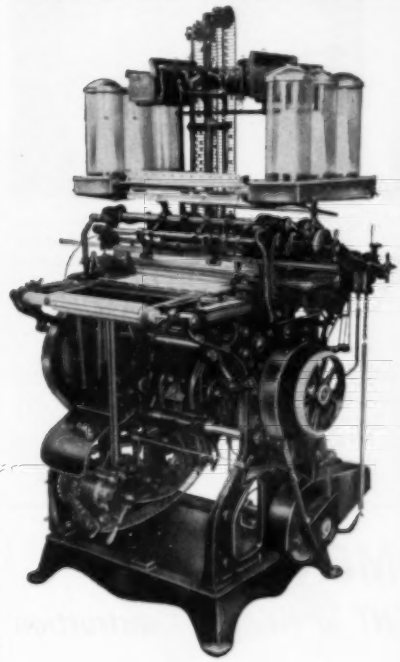




30 WILDMAN 75s . . .
ONE OPERATOR . . .

That's the 75 **GAUGE FULL-FASHIONED HOSIERY MACHINE**

From a production standpoint the Wildman 75 is a proved money-maker—not only in numbers, but in the consistent high quality of its product . . . a better stocking, a longer-wearing stocking—beautiful to see, lovely to touch *and easy to sell!*

With 7 and 10 denier, the 75 produces a tighter stitch that resists snagging and gives the elasticity for that smooth, all-over fit smart buyers demand . . . If you're interested in a market leader Wildman 75 gauge single-head full-fashioned machines merit your immediate attention. Inquire for complete details today.

WILDMAN

makes the machines that tend to their own knitting.

WILDMAN MFG. COMPANY, NORRISTOWN, PA.

MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

industries. . . . **RAYBESTOS-MANHATTAN, INC., MANHATTAN RUBBER DIV.**, Passaic, N. J.—Has appointed Austin L. Hawk manager of the Western sales district. He will be located in the Chicago, Ill., office. . . . **RELIANCE ELECTRIC & ENGINEERING CO.**, Cleveland, Ohio—Has named

ORMOND R. GILLEN (left) has been named sales service staffman and F. JOSEPH TRIGGS (center) has been named a sales trainee at Goodyear Tire & Rubber Co., Chemical Div., Akron, Ohio. C. G. GEHRINER (right) has been appointed manager of the Scale Div. of Fairbanks, Morse & Co., Chicago, Ill.

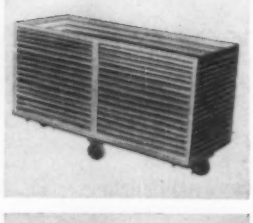
Richard A. Geuder general sales manager. . . . **SOLUOL CHEMICAL CO., INC.**, Natick, R. I.—Has named Arthur Hustwit as director of technical sales. . . . **STEWART-WARNER CORP.**, Chicago, Ill.—Has appointed William A. Brown, Jr., general manager of the Alemite and Instrument Div. . . . **TEXTILE MACHINE WORKS**, Reading, Pa.—Has established an International Div. to handle foreign sales. Edgar Kline is manager of the division. . . . **H. J. THEILER CORP.**, Whitinsville, Mass.—Has taken over the sales and service activities of American Schweiter Co., Whitinsville. . . . **TOWER IRON WORKS**,

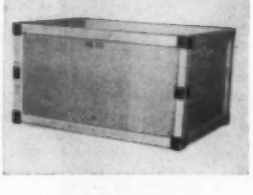
MYRON S. CURTIS (left) and P. KAY SCHWARTZ (center) have been elected to the board of the American Textile Machinery Association, Boston, Mass. DORAN COMPTON (right) has been named technical sales representative in the South for Hilton-Davis Chemical Co., Cincinnati, Ohio.

Providence, R. I.—Has named John H. Markert to the Industrial Div., as a sales engineer. . . . **VICKERS, INC.**, Detroit, Mich.—Has named A. M. Lane manager of mobile products sales. . . . **YALE & TOWNE MFG. CO.**, Philadelphia, Pa.—Has named Richard H. Marsh Worksaver and Warehouser sales manager.

MATERIALS HANDLING EQUIPMENT . . .

Built to Specifications — LIGHT or HEAVY Construction





DRAWINGS and BLUEPRINTS SUBMITTED WITH ALL QUOTATIONS IF REQUIRED

TRUCKS

Vulcanized Fibre for Roving, Doffing, and Yarn • Galvanized Steel and Mild Steel for Roving, Yarn and Battery Filling • Aluminum and Stainless Steel for Yarn, Conditioning, Dyeing, Finishing, etc.

BOXES

Vulcanized Fibre for Toteing and General Mill Use • Galvanized and Mild Steel for Filling; Also Quill Cans with Side or Straight Lip • Aluminum and Stainless Steel for Yarn, Conditioning, Dyeing, Finishing, etc.

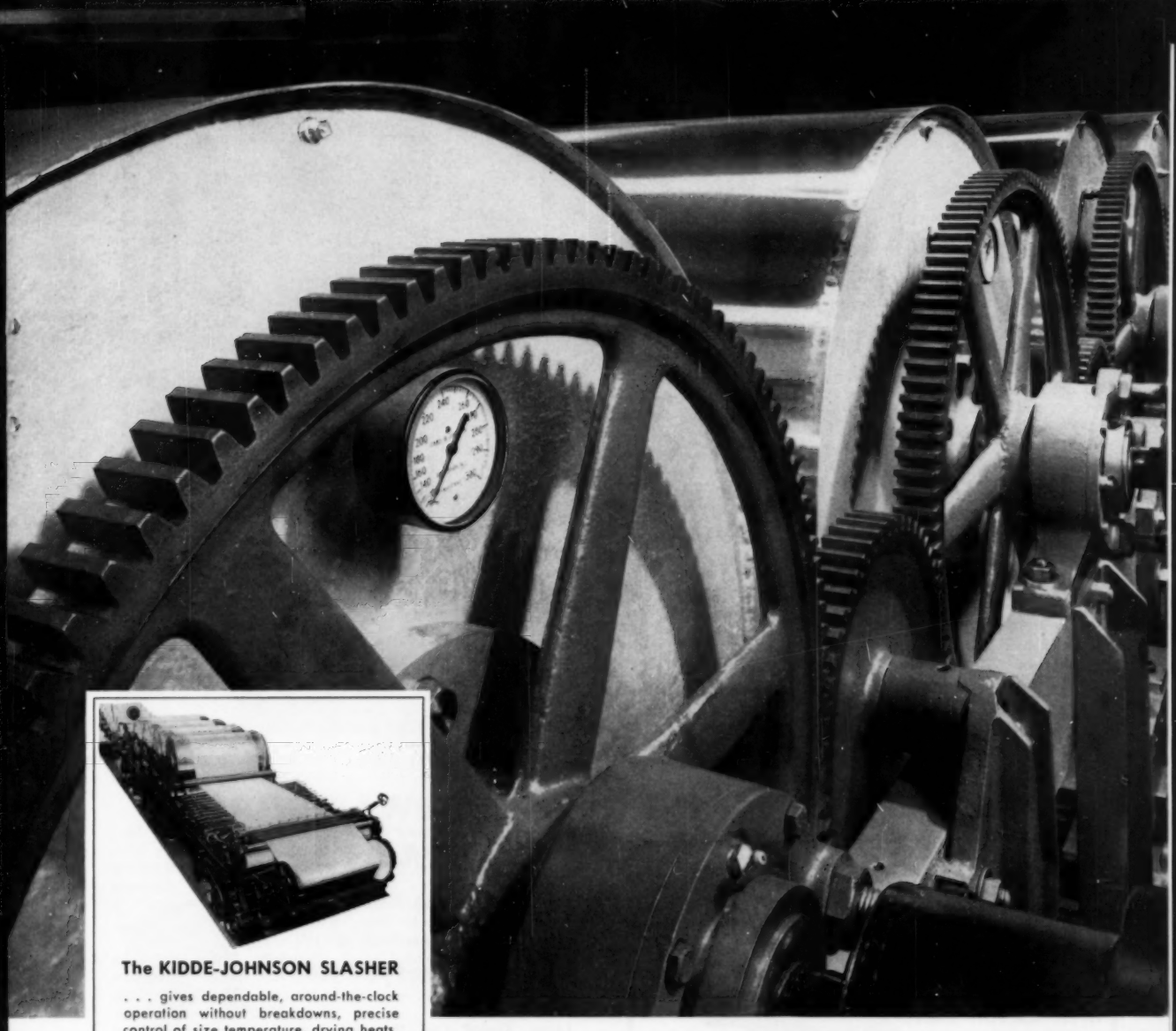
MISCELLANEOUS

Cloth Trucks • Platform Trucks • Skids • Dollies • Cone Trucks • Pin Trucks • Triple & Double Deck Trucks for Transporting Boxes • Steaming & Conditioning Trucks • Work Benches & Tool Boxes • Cabinets • Cheese Trucks • Creel Trucks • Warp Beam Trucks • Cloth Inspection Tables • Quill Can Racks • Wood Trucks of Oak, Maple or Cypress • Tanks, Steel - Stainless & Aluminum • Boxes - Storage, Electrical, Material • Vats - Cleaning, Dyeing, Washing • Stainless Steel Vats & Tubs • Dust Separators • Material Conveying Pipe Systems • Hoods & Exhaust Systems • Ventilators • Belt Guards • Hoppers and Storage Bins.

Bennett Rose Company

ROEBUCK SOUTH CAROLINA

WRITE, WIRE or CALL for immediate Quotations. SPARTANBURG 3-9223



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. . . gives dependable, around-the-clock operation without breakdowns, precise control of size temperature, drying heats, speeds and stretch. Available with 5, 7, 9 or more cylinders for either silk or cotton system warping or combinations of both.

The Kidde-Johnson Slasher is

geared for even warp tension

The smooth, steady operation of the KIDDE-Johnson slasher is built in part by part. The cylinder drive, for example: a sturdy, precision gear system, the drive keeps warp tension constant at the desired setting . . . needs a minimum of maintenance.

Every part of the KIDDE-Johnson slasher . . . from the stainless steel size box to the heavy-duty 20-inch friction beam drive . . . is built for rugged service. The result is a unit which will run for years and years with only routine preventive maintenance required.

Our free, 20 page brochure tells all about this famous warp-sizer . . . how and *why* it will eliminate the element of chance in your sizing. Write today for your copy. Address:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

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MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

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At last--an entirely *new* Slasher Cloth, with a well-cushioned body that assures far better slashing of yarn . . . unexcelled starch penetration . . . and greater resistance to abrasion! Extra high tensile strength minimizes tearing. Chemically treated--*at your option without extra charge*--to hold shrinkage at a minimum . . . combat chemical attack and increase service life. Made only from precision-blended, long length, finely selected wools, with rigid quality control in manufacture.

. . . and for *All* Your Industrial Textile Requirements

✓ **CLEARER CLOTH** . . . all wool or cotton back; highest quality—yet, low in price.

✓ **ROLLER CLOTH** . . . complete range of types, sizes, weights; all wool or part cotton.

✓ **LAPPING CLOTH** . . . cotton warp; either all wool, or part synthetic filling.

✓ **OTHER SPECIALTY WOVEN FABRICS** . . . developed at your request.

KENWOOD TEXTILE PRODUCTS

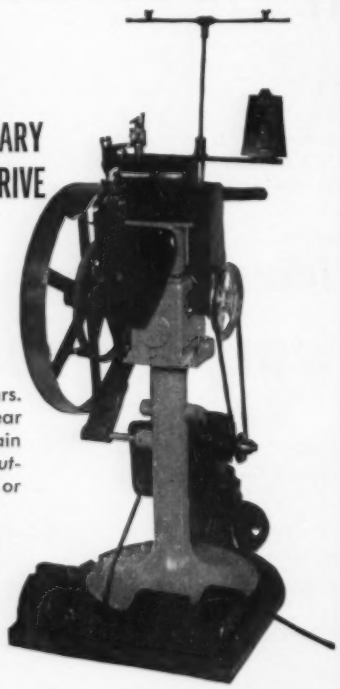
NOONE INDUSTRIAL FABRIC DIV. KENWOOD MILLS

Peterborough, New Hampshire

The oldest manufacturer of woven industrial fabrics in America

MODEL 8-D-1

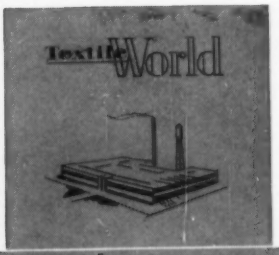
PORTABLE ROTARY WITH MOTOR DRIVE



No exposed gears. Self lubricated gear reduction unit. Chain drive to *Merrow Butted Seaming Head* or *Dinsmore Single Chain Stitch Head.* Automatic cloth stripper. Wide range of stitch requirements.

DINSMORE MANUFACTURING CO.

BOX 267 **SALEM, MASS.**



NEWS about MILLS

COTTON MILLS

Bemis Bro. Bag Co., St. Louis, Mo., is closing its Brooklyn, N. Y., plant and will divide the production among other Bemis plants serving the Eastern area.

Cosmos Imperial Yarn Mills, Hamilton, Ont., is building a one-story addition to its Hamilton plant. The cost will be $10,000. At its Yarmouth, N. S., plant a humidifying system is being installed in the weaving department.

Crown Plush Mills, Paterson, N. J., has purchased the property of the former Jacquard Mills, Morganton, N. C.

F. C. Huyck & Sons, Rensselaer, N. Y., expects to have its new $4,000,000 mill in Aliceville, Ala., completed by May. Approximately 300 persons will be employed.

Linen Thread Co., Paterson, N. J., has purchased the Dolphin Jute Mills, Paterson. Present operations will be continued.

Parkdale Mills, Gastonia, N. C., has placed an order with Saco-Lowell Shops for Model DS-2 three-over-four drawing frames.

Riegel Textile Corp., Trion, Ga., expects to have its new plant in Johnston, S. C., in full operation by April. About 500 persons will be employed in the 160,000-sq.-ft. plant.

A. M. Smyre Mfg. Co., Gastonia, N. C., has ordered 24 Gwaltney spinning frames from Saco-Lowell.

Soule Mill, New Bedford, Mass., has been purchased by United Industrial Syndicate. The mill will continue to operate as an independent subsidiary.

J. P. Stevens & Co., Inc., Industrial Cotton Mills Div., Rock Hill, S. C., is installing new dyeing and finishing equipment. The cost is $300,000.

Summitt Mills, Summitt, Miss., has started production in its new 42,000-sq-ft. plant. About $150,000 worth of machinery has been installed for the manufacture of mattress pads, quilts, and coverlets.

West Point Mfg. Co., West Point, Ga., has ordered SG-1 spinning frames from Saco-Lowell Shops, Boston, Mass.

White Horse Mill, Greenville, S. C., has increased its spinning capacity and installed new looms as part of its expansion program.

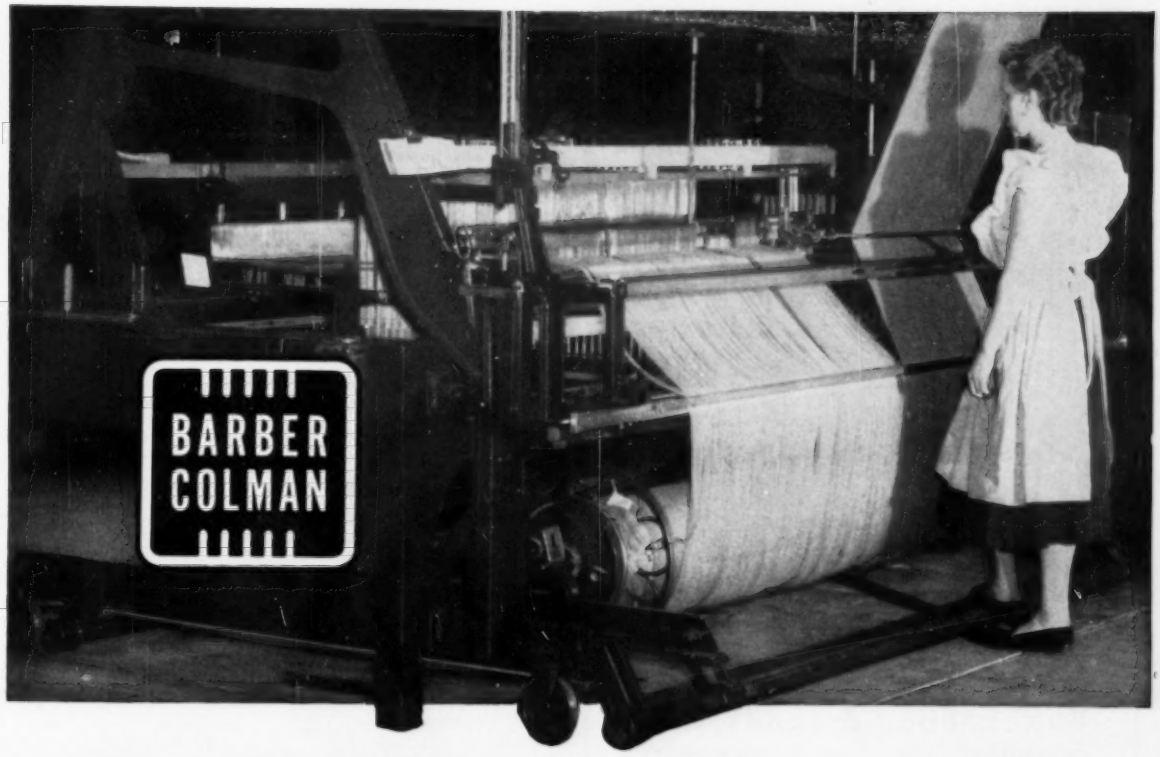
WOOLEN AND WORSTED MILLS

Albany Felt Co., St. Stephen, S. C., is nearing completion of its new mill. The one-story building contains 100,000 sq. ft. Felt looms up to 600 ins. wide and 84-in. woolen cards will be installed.

Amerotron Corp., New York, N. Y., has sold its mill at Machias, Me., to Deering, Milliken & Co., New York, N. Y. Allen B. Sibley will be in charge of operations.

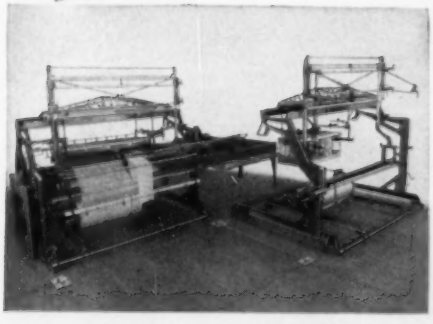
Bigelow-Sanford Carpet Co., Thompsonville, Conn., expects to start production later this year in its new mill in Landrum, S. C.

Massachusetts Mohair Plush



WARP DRAWING MACHINE DRAWS DROP WIRES, HEDDLES, AND REED IN ONE OPERATION

Write for new
USERS LIST



On a Barber-Colman Warp Drawing Machine, at each stroke of the needle a thread is drawn through the correct selection of drop wire, heddle, and reed dent. This correct selection is made accurately and automatically for each pick by a sequence of mechanical motions controlled by a pattern strip punched in accordance with the designer's draft. Users of the machine are enthusiastic, saying such things as "pays for itself in two years", "gets samples on the loom quickly", "high sley satin warps drawn in 5½ hours instead of 48 hours", "makes style changes rapidly", "saving more than $22 per warp", and the like. Let your Barber-Colman representative look into *your* situation — perhaps he can suggest an installation that could increase production, improve the products, and lower costs.

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For *all* your Barber-Colman machines, be sure to call on the Service Department of your nearest Barber-Colman office. The men who staff this organization are specially trained and equipped, with a wealth of experience in checking, maintaining, repairing, and modernizing all types and models of Barber-Colman equipment. They are backed by alert main and branch offices who see that they are supplied with complete and reliable parts and information.

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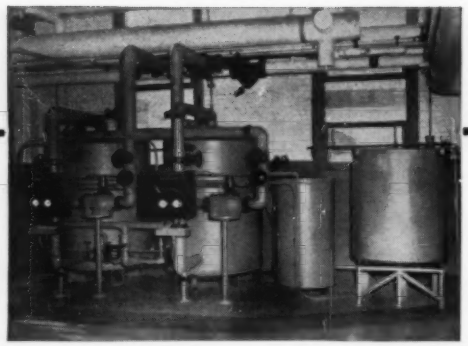

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CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

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BEST FOR MARKING TEXTILES AND FABRICS!

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EMPIRE TEXTILE MILL CRAYON

The result of many years of careful study and experiment to meet the particular requirements of the Textile Industry . . . Available in 18 Colors and in Two Sizes! Write for colorful marking guide. Dept. T-8

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EMPIRE TEXTILE MILL CRAYONS
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NEWS ABOUT MILLS — Continued

Co., Lowell, Mass., has acquired Neisler Mills, Inc., Kings Mountain, N. C., and will operate it as the Neisler Div. The division will be managed by William F. McKee, Howard B. Jackson, and Paul Mauney.

National Spinning Co., Washington, N. C., will install four SS-4G spinning frames.

Pacific Mills, Brookneal, Va., is building a 50,000-sq.-ft. brick warehouse.

SYNTHETICS MILLS

Ames Textile Corp., Lowell, Mass., has purchased Buresh Non-Wovens, Inc., Northampton, Mass. Ames is building a new one-story plant in Westfield in which the nonwoven operation will be located. The new mill will contain 11,000 sq. ft. Officers of the new subsidiary are: Brooks Stevens, Jr., president; Francis M. Buresh, vice president and executive officer; Alden French, treasurer.

Bigelow-Sanford Carpet Co., Thompsonville, Conn., has been licensed under American Viscose Corp.'s patent to produce crimped rayon staple fiber.

British-American Silk Mills Ltd., Granby, Que., has been purchased by A. Wesley Mason and will be known as A. Wesley Mason & Son Ltd.

Burlington Industries, Inc., Greensboro, N. C., is opening a new plant in Valencia, Venezuela, that will be known as Branger Burlington Textiles, C. A. The new plant will process synthetic fibers. Armando Branger will be general manager and R. P. Arnold will be plant manager. Burlington is also building a warehouse at Hot Springs, N. C.

Duffy Silk Co., Buffalo, N. Y., has sold all the production equipment of its Murphy, N. C., plant to the Hemmerich Corp., Denver, Pa.

Felters Co., Boston, Mass., is building an addition at Millburg, Mass, for the production of Allfab. About $350,000 will be spent for the building and new machinery.

Fitchburg Yarn Co., Fitchburg, Mass., has ordered Gwaltney frames from Saco-Lowell.

Rex Mills, Inc., Gastonia, N. C., is building a 35,000-sq.-ft. addition. The extra space will be used to spin synthetic fibers.

Schlegel Mfg. Co., Rochester, N. Y., will build a $2,000,000 plant that will replace two existing units.

J. P. Stevens & Co., Inc., Greenville, S. C., is nearing completion of a $1,500,000 modernization program at its Monaghan, Greer, and Victor plants. The program included: Monaghan: modernization of weaving equipment and air conditioning of the spinning room. Greer: construction of a new warehouse. Victor: modernization of preparatory equipment and installation of overhead cleaning on spinning. The Aragon-Baldwin Mills Div., Rock Hill, S. C., is replacing 21,000 spindles with long-draft, large-package spinning. The cost is $1,000,000.

Toxaway Corp., a subsidiary of Abney Mills, Anderson, S. C., has purchased the Toxaway, Ladlassie, Gossett, Riverside, and Southside Plants of Textron American, Inc.

Paul Whitin Mfg. Co., Northbridge, Mass., has purchased Gilbertville Mills, Inc., Gilbertville, Mass.

KNITTING MILLS

Daniel Hosiery Mills, Lincolnton, N. C., has been incorporated with a capital of $100,000.

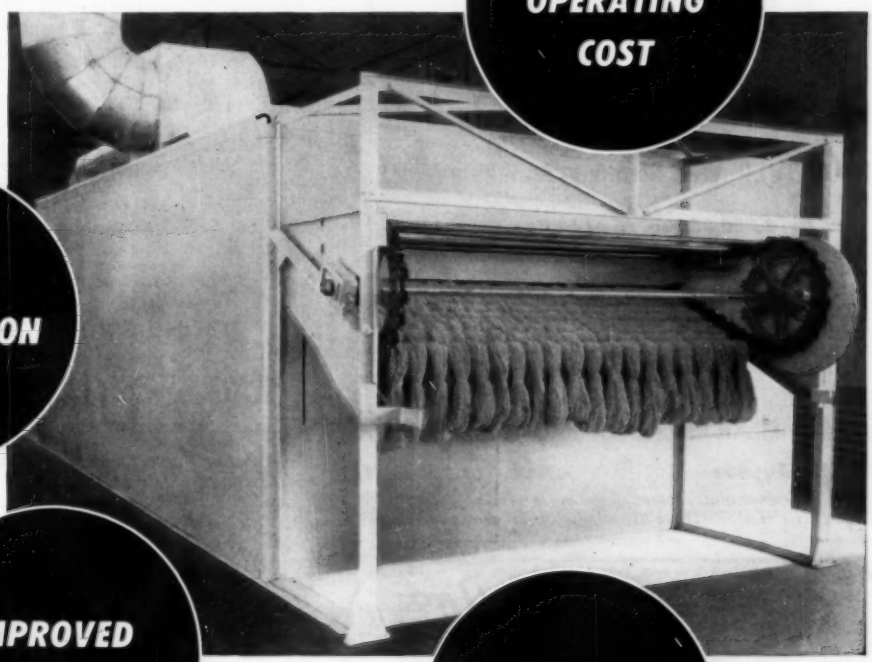
Davenport Hosiery Mills, Inc., Chattanooga, Tenn., has started production in its new mill in Ellijay, Ga. The new mill cost $1,000,000.

General Knitting Mills, Inc., Monroe, N. C., is building a 30,000-sq.-ft. plant. All General's operations will be performed here.

Put a PROFIT in your yarn drying!

LOW OPERATING COST

EASIER INSTALLATION



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RAPID DRYING

Proctor Automatic Skein Yarn Dryer with Two-Way air circulation, drying dyed carpet yarn.

PROCTOR DRYERS for skein yarn

Regardless of your output, there is a Proctor Yarn Dryer with the right capacity to make your drying profitable. Truck Dryers for skeins and cakes, or Automatic Dryers for continuous operation, both feature controlled air circulation to provide the *greatest drying uniformity obtainable*. Cotton, wool, silk, or synthetics can be dried at fastest possible rates—show substantial savings in time, labor, and steam requirements. And, as with all Proctor equipment, you can depend on performance guaranteed in terms of the finished product produced. Investigate these profit opportunities now—write today for latest information bulletins.

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AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "SEDMANIZED"® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

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NEW PROFITS
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EPI Plastic Bobbin*
will Save you Money

Speeding up on any type yarn calls for the EPI Bobbin. Dynamically balanced, dimensionally stable, permanently super-smooth—and outlives several wood bobbins.

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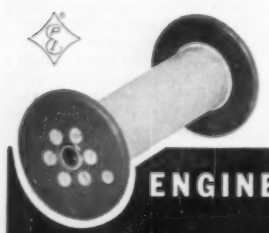


New England Representative:
J. H. Windle, Jr., 231 S. Main St.
Providence, R. I.

*U. S. Patent 2,625,343

ENGINEERED Plastics
INCORPORATED
Gibsonville, North Carolina

NEWS ABOUT MILLS Continued

P. H. Hanes Knitting Co., Winston-Salem, N. C., is operating in its plant in Galax, Va. About 300 persons will be employed when full production is reached. Allan Zachary is resident manager.

Kenosha Full Fashioned Mills, Inc., Kenosha, Wis., has purchased the equipment and trademarks of Contour Hosiery Mills, Rockford, Ill. The machinery is being transferred to the Kenosha plant.

Lenoir Hosiery Mills, Inc., Lenoir, N. C., is installing new seamless equipment; but the cost will be "considerably less" than the $4,500,000 reported in the January issue of TW, according to Ira M. Schey, Jr., president. We regret the error.

Seifert Woolen Mills, Jefferson, Wis., is building a 36,000-sq.-ft. addition to its plant. The new addition will double the present knitting capacity. The company has purchased the Carl J. Seifert Co., Jefferson.

Trim-Knit, Inc., New York, N. Y., has purchased six machines that will produce jacquard designs and machinery that will make bulky and shaker knit fabrics. Machinery for the production of elasticized knitted waistbands has already been installed.

DYEING AND FINISHING PLANTS

Geltman Sponging Co., Woonsocket, R. I., has completed a modernization program as the result of extensive flood damage. Operations have been moved to the upper floors. The company has changed its name to Woonsocket Sponging Co.

Lyman Printing & Finishing Co., Inc., Lyman, S. C., is the new name of the former Lyman Bleachery. The mill was recently purchased by M. Lowenstein & Sons, Inc., and will be operated under the printing and finishing division of Lowenstein.

Raymond A. All has been appointed assistant to **William E. Clark**, vice president and general manager of the textile division of U. S. Rubber Co., New York, N. Y.

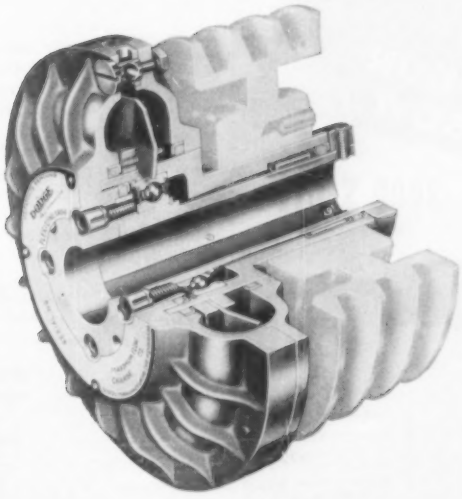
J. W. Anderson has been named manager of the cost, standards, and quality-control department of Greenwood Mills, Greenwood, S. C.

Robert O. Arnold has been named chairman of the board and of the executive committee and president of Fulton Bag & Cotton Mills, Atlanta, Ga.

C. C. Auman has resigned as superintendent of seaming at Belvedere Hosiery Co., Charlotte, N. C.

Clare D. Bedell has been named resident manager at Pawtuxet Valley Dyeing Co., Phenix, R. I.

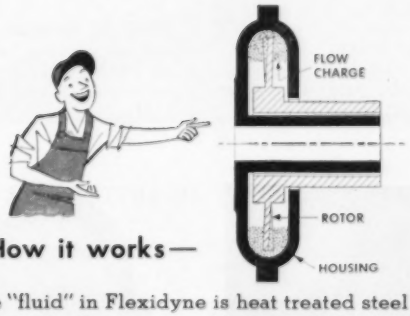
Norman Blackledge has been named production manager for all Southern mills of American Thread Co., New York, N. Y.



FLEXIDYNE

THE DRY FLUID DRIVE

Revolutionizes Drive Performance on Roving Frames and Cards!



How it works—

The "fluid" in Flexidyne is heat treated steel shot. A measured amount, called the flow charge, is contained in the housing, which is keyed to the motor shaft. When the motor is started, centrifugal force throws the flow charge to the perimeter of the housing, wedging it between the housing and the rotor which transmits power to the load.

After a momentary slip between housing and rotor the two become locked together and achieve full load speed, operating without slip and at *100% efficiency* during the running cycle.

From the textile field—both cotton and wool—come glowing reports on the performance of Flexidyne, the new "dry fluid drive." Flexidyne provides a new and better way to handle drive problems. It gives textile machinery a really *soft* start. It offers protection against shocks and overloads. It saves power. It gives 100% efficiency at full load!

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ASSEMBLY PLATE — Holds internal parts in position when head is removed.
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SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

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on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

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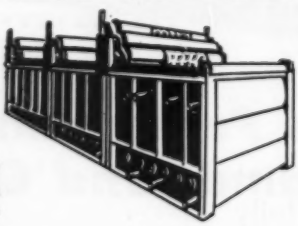

8,000 Gallon Boil-Off Tank

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NEWS ABOUT MEN — Continued

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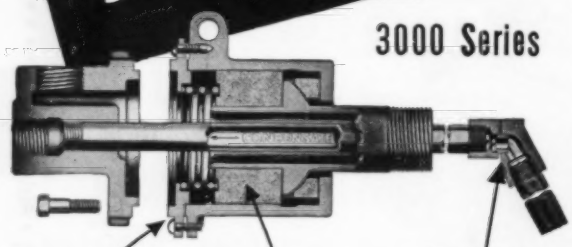
Johnson Joint with SYPHON ELBOW

3000 Series



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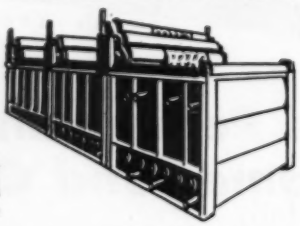

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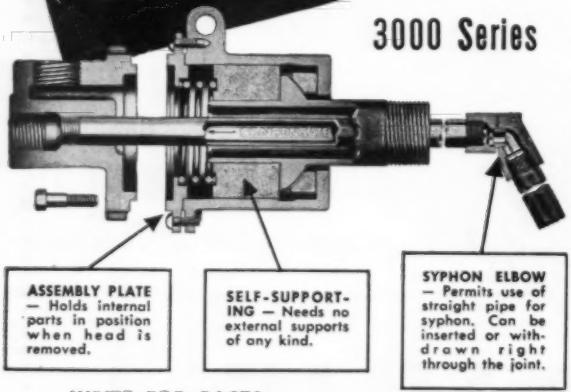

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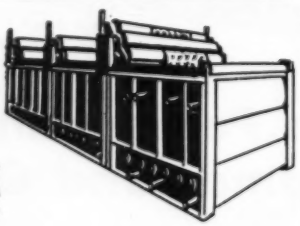

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Caldwell TANKS AND TOWERS

WALTER E. FLOYD has been named superintendent of the textile mills of Goodyear Tire & Rubber Co., Cartersville, Ga.

Lewellen P. Hayden has been elected president and treasurer of Charlottesville Woolen Mills, Inc., Charlottesville, Va.

E. H. Hege has been promoted to foreman of the cotton-yarn put-up department of North Carolina Finishing Co., Salisbury, N. C.

Brady Holland has been named superintendent of Newton Rayon Mills, Newton, N. C.

Felix R. Husler has been elected vice president in charge of production at the Joan Plush Mills plants in Woonsocket and Burrillville, R. I., and Hickory, N. C.

Jesse M. Jackson has been named manager of the New Holland, Ga., plant of Pacolet Mfg. Co. He succeeds George Baker.

F. Lawrence Lee has been named superintendent of the new F. C. Huyck & Sons plant now being built in Alicevile, Ala.

Dan M. Leister has been named manager of the Whitmire, S. C., division of J. P. Stevens & Co., Inc.

Raymond Leonard has been named dye-and-finishing room superintendent at Knit-Sock Knitting Mills, Inc., Hickory, N. C.

H. C. Mangold has been named president of Archer Mills, Inc., Columbus, Ga.

David Nevard has been named vice president in charge of the cotton department at Calvine Cotton Mills, Charlotte, N. C.

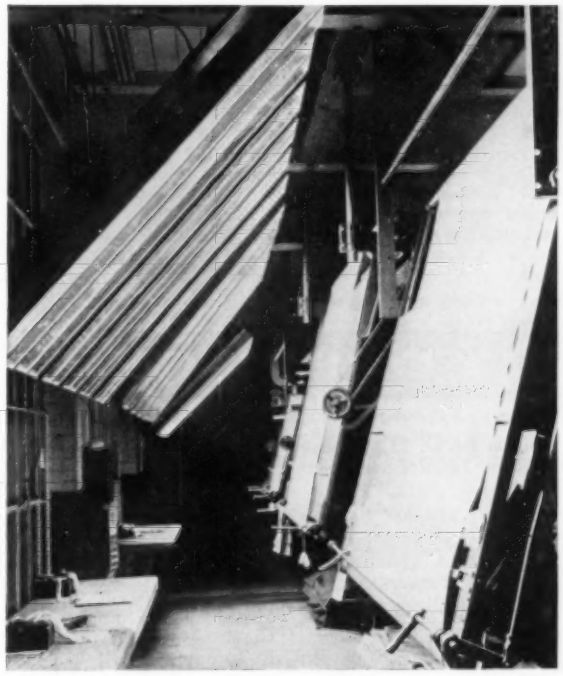
Frank A. Norman, Jr., has been promoted to treasurer of West Point Mfg. Co., West Point, Ga.

Elmer L. Pence has been promoted to general superintendent of weaving and finishing at Cannon Mills Co., Kannapolis, N. C.

Elwyn C. Preston, Jr., has been promoted to vice president of West Point Mfg. Co., West Point, Ga.

James Rotan has been named superintendent of the Phenix Plant of Burlington Industries, Kings Mountain, N. C.

C. W. ROWLAND (left) has been appointed plant superintendent in charge of yarn manufacturing at Durham Spinning Mills, Div. of Durham Hosiery Mills, Durham, N. C. PAUL SWINK (center) has been named overseer of carding and spinning in the spun-nylon and cotton-yarn departments, and OLIF PASCHALL (right) has been named general overseer of the spun-Orlon-yarn departments and the testing laboratory.



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G-E HIGH OUTPUT fluorescent lamps are ideal for such jobs as perching, weaving or knitting. For more information on how to get better work with G-E High Output fluorescent lamps, ask your nearest General Electric representative, or write: Large Lamp Dept., General Electric, Dept. TW-3, Nela Park, Cleveland 12, Ohio.

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Try Laurel *OLITEX 4M* as a softener for those sulfur black dyed yarns. It will give just the right degree of softness and lubrication to the yarn. And watch the shade bloom! Performance tested over many years. Liquid form—easily dispersed in water—no boiling or homogenizing needed. Write for sample.

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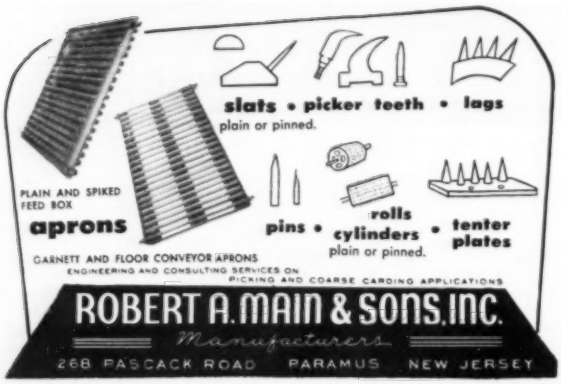
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plain or pinned.
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C. J. Squires has been named superintendent of Jacquard weaving at Northampton Textile Co., Mount Holly, N. J.

E. Hester Warren has been promoted to general superintendent of carding, spinning, and shop maintenance at Cannon Mills Co., Kannapolis, N. C.

Fred L. Wilson has been promoted to general manager of Cannon Mills Co., Kannapolis, N. C.

OBITUARY

Simon Baxter, 72, president of Maple Textile Corp., Paterson, N. J.

Edwin H. Bost, 71, retired manager of Erwin Mills, Inc., Erwin, N. C.

Charles W. Brown, Jr., 60, chairman of the board of Roxbury Carpet Co., Saxonville, Mass.

W. A. Brown, 70, retired assistant overseer of weaving at the Easley Plant, Woodside Mills, Easley, S. C.

James A. Burke, Jr., 89, treasurer of Sagamore Mfg. Co., and Foster Spinning Co., Fall River, Mass.

W. C. Gibson, 68, owner of Gibson Textile Specialty Co., Decatur, Ga.

Louis Granoff, 62, vice president of S. Granoff Mfg. Co., Central Falls, R. I.

Walter Gregory, 83, retired overseer at Cranston Print Works, Cranston, R. I.

Charles G. Heines, former superintendent of Duplan Corp., Hazleton, Pa.

James C. Hill, 54, secretary and assistant treasurer of Brown Mfg. Co., Concord, N. C.

Norman B. Hill, 67, retired president of Hill Spinning Co., Roseboro, N. C.

William C. Johnson, 81, owner of East Providence Mills, Providence, R. I.

Frank P. Marson, 58, manager of Buser Ribbon Mills, Murfreesboro, Tenn.

Cecil R. Merett, 55, mill manager of Dominion Woolens & Worsteds Ltd., Peterborough, Ont.

Victor B. Moore, 58, production manager of Durham Hosiery Mills, Durham, N. C.

Robert B. Nixon, Jr., 47, former plant manager of Guyan Mills, Valley Falls, R. I.

Louis Penez, 67, superintendent of Argonne Worsted Mills, Woonsocket, R. I.

Robert R. Ragan, 85, president of Ragan Knitting Co., Thomasville, N. C.

Clarence E. Rich, 49, plant manager of A. Schottland, Inc., Rocky Mount, N. C.

Bertram H. Saunders, 82, retired owner and president of Ho-Ho-Kus Bleachery, Ho-Ho-Kus, N. J.

John H. S. Spencer, 60, vice president of H. W. Butterworth Sons & Co., Bethayres, Pa.

Attamore A. Tucker, retired executive vice president, director, and treasurer of the Hope Webbing Co., Pawtucket, R. I.

Edward B. Waller, Sr., 79, general manager and secretary-treasurer of Philadelphia Hosiery Mills, Louden, Tenn.

Charles A. Wanner, 79, founder and president of C. A. Wanner, Inc., Fleetwood, Pa.

P. B. Wendler, 57, chief engineer and board member of Joseph Bancroft & Sons Co., Wilmington, Del.

Charles B. Wilkinson, 54, overseer at United Spinners Corp., Lowell, N. C.

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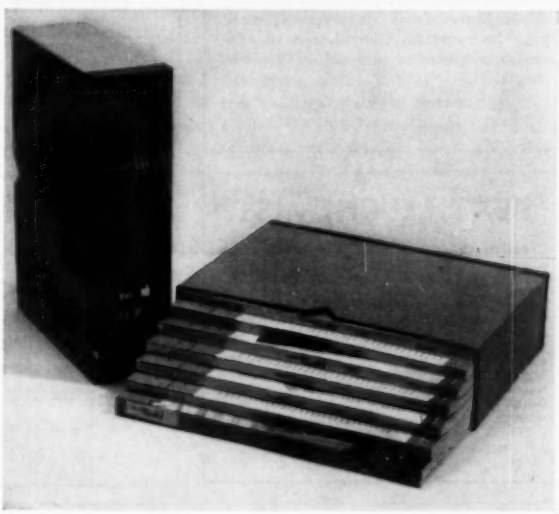

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P-9087, Textile World
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Creative chemist with 3-5 years of plant experience in sizing, printing and/or finishing wanted to work in Charlotte, North Carolina, Laboratory of growing industrial firm. Splendid opportunity for man with initiative, who is capable of working with a minimum of supervision. Position entails the development and evaluation of textile specialties for sizing, printing and finishing cotton and synthetic fibers. Send detailed resume of experience. State salary requirements.

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DESIGN ENGINEERS AND DRAFTSMEN, with background in one or more of the following product lines:
Picking and carding and related preparatory equipment
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Announcing New Liquidation Sale:

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36—C&K W3 Looms, 82", 25 harness dobby, motor.
12—C&K W3 Convertible Looms, 82", 25 harness dobby, motor.
12—C&K W3 All-Purpose Looms, 82", 25 harness dobby, motor.
24—Spdls. Hacoba Automatic Filling Winders—1954.
12—Spdls. Britoba (Mischamp) Filling Winders—1951.
1—H&W Yarn Conditioner, Ri, single truck.
1—Voelker 66" High Speed Press, motor driven.
2—Rodney Hunt Express Fulling Mills, Stainless Steel, 8 string.
1—Rodney Hunt Fulling Mill, 6 string, 25 hp motor.
1—Rodney Hunt S.S. Washer & Dye Kettle, 6 string.
1—Rodney Hunt 8 string Dolly Washer.
1—Birch Detwister and Birch Detacker.
1—Gessner 72" Scutcher & Vacuum Extractor, 25 pump.

The former ROCHESTER MILL,
East Rochester, N. H.

1—Reiner Hi-Speed Warper, 54-¼" wide w/Sipp Eastwood Creel, 800 ends.
2—Sipp-Eastwood Redraw Machines, Model GK, 120 spdls, age 1954.
1—Hermas 4 Blade Shear, Model AV, 75" wide, 1947.
16—Atwood Uptwisters, Model #110, 208 spdls, 2 lb. Headless Package.

The former AMES TEXTILE CORP.,
Southbridge, Mass.

154—Crompton & Knowles W2 Looms, 82", 20 harness dobby, motor driven.
1—Bachman-Uxbridge Gentle Air Slasher, 80", West Pt. Boxes, 1950.
7—Saco-Lowell Tape Drive Twisters, 200 spdls. ea., 3" ri, 4" & 5" ga.
6—Riggs & Lombard Stainless Steel Encl. Dye Boxes, 6' wide.
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1—Birch Cypress Washer, 82" wide, 4 squeezers, 1946.
1—Riggs & Lombard Rope or Open Washer, 4 compts., 54".
1—Kenyon Pin Tenter Dryer, 40' l., 84" w., multi-pass, complete.
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1—Parks & Woolson Gap Shear, 3 blades, 72", motor driven, 1948.
2—Parks & Woolson Centurial Shears, 66", 3 blades, motor driven.
2—Gessner & Parks & Woolson Semi-Decaters, 72" & 66", 1948-53.
6—Hungerford & Terry Water Filter Tanks, 20' long x 8' dia., 1953.

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26—Lowell 40" Cards, 27" doffers, 12" coilers.
1—Abington Card Stripping System w/Hoffman pump, 1947.
15—Whitin Tape Drive Spin. Frames, Model F, 204 spdls., 3-¼" ga.
2—Saco-Lowell Tape Drive Ring Twisters, 204 spdls., 4-½" ga.
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96—Del. Saco-Pettee 4 Del. Drawing, rebuilt 1951.
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25—Saco-Lowell Combers, 12 heads, 10-½" lap, 1936-41.
1—Ingersoll-Rand Air Compressor, 20 x 13, Synchronous 25 HP.
1—Barber-Colman Hi-Speed Quiller, 30 spdls., 1949.

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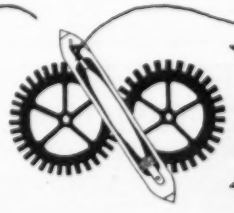
23—H&B Cotton Cards, 40", 26" doffer, spindle backs, 110/120 wire.
5—H&B 10 x 5 Slubbers, Hi-Draft, 104 spdls. ea., 1946.
32—H&B Spin. Frames, S-L Roth L.D., 2-¾" ga, 1-¾" ri, 288 spdls.
56—Crompton & Knowles C6 Looms, 60", 25 harness dobby, 4x1 box, 1946.

Other Machinery We Have Available For Sale:

1—Johnson 7 Drum Slasher 62" headway, 1949.
1—Cocker 7 Drum Slasher, 62" headway, 1948.
12—Whitin Superdraft Roving Frames, Model G8, 8x4, 72 spdls.
2—Edmos Circular Knitting Machines, Model EEM, 17"-24" dia.
2—Hinnekens Stainless Steel Dye Boxes, 12' wide, 1948.
1—Greenville Stainless Steel Slack Rope Washer, 1948.
1—Stainless Steel Pneumatic Wringer, 1948.

Detailed Catalogues and Descriptions Will Be Mailed Upon Request



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3—Foster Tube, Cone WINDERS, Mod. 101, 102, 5-¾", 6-¾" Trav.
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26—Whitin 45" Cotton Cards—27" Doffer—12" Coilers
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SPINDLESS—60 SP.—1948—4½" TRAVERSE

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½ Lb. Pkg.—2 Motors

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Additional Auction Advertising on page 245

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Machinery very late, desirable, like-new condition. Sold as individual items or complete unit. At reasonable prices.

FULL LINE OF SUPPLIES FOR THIS MACHINERY SUCH AS:

15,000 Nylon Type Bobbins
Bobbin Boards. Shell Boards
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8" gauge. 160 spindles per machine. Complete with separators. 2 motors per machine. 440v. 3 phase, 60 cycle. Magnetic starters.

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Large lot extra Noble Comb Circles

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9—T&W Sql Hd Dble Can
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12—P-S Sql Hd Dble Baller
6—P-S Sql Hd Sql Can
1—P-S Sql Hd Abbott Spool Carriage

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24—Warner-Swasey Dual Pin Drafters. 15" Coilers. Mdl 2350, yr 1950.
20—Warner-Swasey Quad Pin Drafters. 15"" Coilers. Mdl 2380, yr 1950-2.
4—Warner-Swasey Dual Pin Drafters. Balling Hds. Mdl 2350, yr 1950.

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1—Warner-Swasey Pacific Converter. M-2800, yr 1953.

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Lot Can Springs for 15 x 36
2500 Fiber Roving Cans 12 x 36

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24—Whitin 200 x 4½" ga x 3" Herr Ring Mdl FW-3 Spg. Bijur Oilers. 15-HP 550V mtrs., yr 1944-6.
30—P-S 200 x 3-½ x 2-¾" Ring, Whitin Changeover, Spg Frames. 10-HP mtrs.

WINDING

2—Abbott Mdl 65 Wood Cone, 108-spdl, yr 1947
4—Foster Mdl 57 Dblrs, 100 x 7" Tr. 550V mtrs.
2—Foster Mdl 102 Cone Winders, 100 spdl.
2—Abbott 140-spdl Auto Quillers. 8-¾" Bobbin. Cycle Changers. 550V. Ser 597-8.
1—Abbott 100-spdl Auto Quiller Incomplete
1—Cycle Changer 550V for Abbott Quiller
1—Abbott 120-spdl Auto Quiller. 8-8¾" Bobbin. Cycle Changer. Ser 469.

SPOOLING—DRESSING

6—D&F 92" Pinless Reel Units. Mtr. Dr.
2—D&F Mdl 60 High Speed 40" Jackspoolers. Ser 316-7, w/Mag Creels.
Lot Metal Jackspools 40-1⅛ x 10

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229—Steel Heddle Co. Harness Frames 74" Floating Hooks
10, 150—Steel Heddle Co. Harness Frames 78" Floating Hooks
24—C&K 82" Mdl W-2 x 20-Harness 4x1 Box Auto Looms. 1½-HP 220V M.D.

WARPING—SLASHING

2—Entwistle 72" High Speed Beam Warpers. Reeves Drives. 500-end Mag Creels
100—Warper Beams 72"
1—S-L High Speed Hot Air Slasher, yr 1948. Less Size Boxes & Pumps
1—S-L 84" High Speed Hot Air Slasher Complete, yr 1949.
1—R&L Size Storage Kettle 400-gal. 48 x 48.
1—R&L S.S. Size Cooking Kettle 250-gal. 42 x 42.

FINISHING

1—Gessner 84" Mdl PD20 Rotary Cloth Press. Reeves. Mtr.
1—Gessner 72 x 36 Semi-Decater. New Cyl.
1—J. Hunter 78 x 18 Pneumatic Rubber Squeeze Rolls w/mtr. 1944.
1—P&W 4-Roll Sand & Wire Brush Mch w/Steam Box
1—Gessner 72" Mdl PD20 Rotary Cloth Press w/Hydrollizer, conveyor & Reeves Dr.
1—P&W 66" AWC Type Meas. Mch w/ Toledo Cloth Scale
25—Flat Cloth Trucks
1—Birch Ceiling Scutcher w/pump & motor
2—Gessner 72 x 36 Semi-Decaters
1—Butterworth Singer 4-Burner 77", yr 1941.
1—P&W 66" x 4-Cyl Brush w/Folder. M.D.
2—Birch 5-Bowl 72" Wood Bowl Crabs. 1 w/Rubber Rolls. Vac Ext.

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2—P&W 80½" x 2-Blade Dixie Shears w/ Flock Removal, yr 1944-6
2—P&W 3-Blade 66½" Davidson Shears
1—P&W 4-Blade 72" Davidson Shear
1—P&W 66½" x 2-Blade Mdl A Shear

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1—R&L S.S. Sample Pce Dye. M.D.
1—R. Hunt S.S. 18" Sample Pce Dye
1—R. Hunt S.S. 33" x 4-Pc. Dye Kettle
2—J. Hunter 12' S.S. Pce Dye, yr 1948
1—R&L 6' S.S. Pce Dye, Type 116. Enc. M.D.
1—R&L 6' S.S. Pce Dye, Herringbone Reel, Open Top
1—R&L 12' S.S. Pce Dye, Type 116 Enc.
2—J. Hunter 6' S.S. Pce Dye, Enc., yr 1947, M.D.
1—J. Hunter 34" S.S. Pce Dye, Open Top. M.D.

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2—Franklin S.S. 500# Pkg Dye Mchs. Controls, mtrs., yr 1944
1—Franklin Monel 500# ditto

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1—J. Hunter 7-cyl 60 x 30 Garnets
1—S&F 60" Shredder
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1—Taylor-Stiles "Little Giant" Stock Cutter
1—D&F Mixing Picker 40" x 6-Bar
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8—Spare 60 x 30 Cyls. Old Wire
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1—Economy Baler. 54 x 27. Mtr Dr.
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1—B. S. Roy Grinder Stand
Toledo Scales—Stock Blowers, etc.

MISCELLANEOUS

1—H.W Yarn Conditioner, Type ST2, yr 1950
1—Birch Railway Sew Mch w/Merrow Hd
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1—Kenyon Pin Dryer 12 Pass
1—67" Werner Pneumatic Padder 12 ton S.S. Dye Becks 2' to 14'. Examining Machines 60"-72", Forward & Reverse
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C. Chemicals and Dyestuffs.
D. Cleaning Equipment.
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies.
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R. Weaving and Warp Preparation Equipment and Supplies.
T. Yarn-Production, Twisting and Winding Equipment and Supplies.

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Acme Steel Co.	52	P, T
Allentown Bobbin Works, Inc.	212	T
Allis-Chalmers Mfg. Co.	22-23	F, Q
American Air Filter Co., Inc.	38	A
American Aniline Prods., Inc.	35	C
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American Enka Corp.	205	G
American Lava Corp.	169	L, RT
American Schweiter Co.	44	T
American Viscose Co.	197	G
Antara Chemical Div., General Aniline & Film Corp.	21	C
Appleton Machine Co.	215	E
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Armstrong Cork Co. (Roll Covering)	213	T
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Carbic-Moss Corp.	153	C
Carrier Corp.	34	A
Celanese Corp. of America Yarn Div.	193	G

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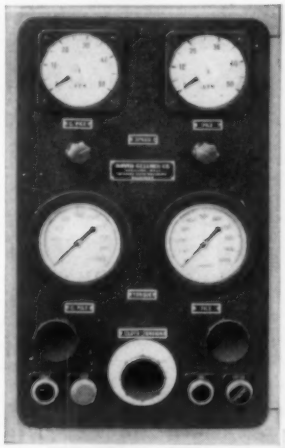

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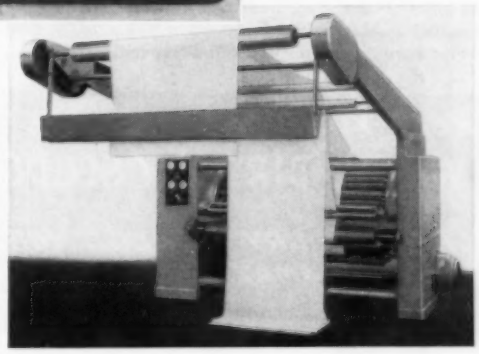

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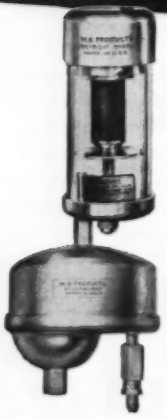
M-B AMOSKEAG PNEUMATIC ROLL PICKER

MODEL A-VT-A

A pneumatic tool especially designed for the specific purpose of REMOVING LINT and FLY from the top rolls of Spinning Frames and Roving Frames. Saves time and does a better job by substituting mechanical cleaning instead of laborious hand methods. Air deflector prevents fly and lint being blown into yarn when spinning. Adjustable valve permits any desired spindle speed.

KEEP YOUR AIR LINES FREE of WATER-DIRT and SLUDGE

KEEP AIR DRY AT ALL TIMES
USE THIS AMAZING COMBINATION
AND GUARD YOUR PNEUMATIC SYSTEM



M-B AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint Blowers, Blow-off Hoses and various air-operated controls.

M-B AUTOMATIC AIR TRAP

Ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout. Weighs less than 5 pounds.

WRITE FOR LITERATURE

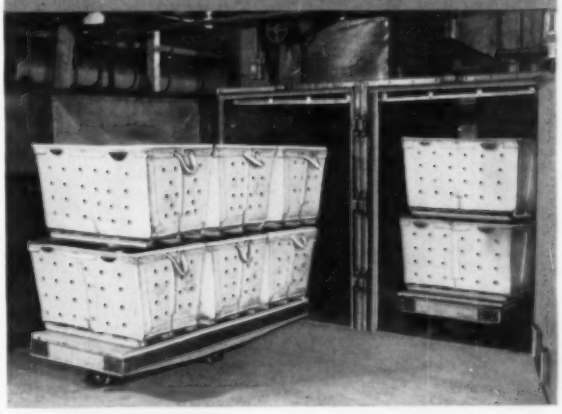
M-B PRODUCTS
46 VICTOR AVE., Div. 16
DETROIT 3, MICHIGAN

Century Electric Co.	75	F
Chrysler Corp., Airtemp Div.	70	A
Cleaver-Brooks Co., Boiler Div.	165	Q
Clipper Belt Lacer Co.	184	Q
Cocker Mach. & Fdry. Co.	60	R
Cole Mfg. Co., R. D.	198	B E
Collins Bros. Machine Co.	194	T
Columbia-Southern Chem. Corp.	191	C
Continental-Diamond Fibre Div., The Budd Co., Inc.	14	OPQR
Corn Products Refining Co.	217	C
Crompton & Knowles Loom Works	13	R
Crompton-Richmond Co., Inc.	222	N
Crucible Steel Co.	62	O
Cutler-Hammer, Inc.	78	F
Darnell Corp., Ltd.	216	P
Dary Ring Traveler Co.	208	T
Dayton Rubber Co., The Textile Div.	26-27	RT
Dinsmore Mfg. Co.	226	E
Dodge Mfg. Corp.	231	Q
Dolge Co., C. B.	200	B
Dommerich & Co., Inc., L. F.	18	N
Dow Chemical Co.	199	C
Draper Corporation	1, 149	R
duPont de Nemours & Co., E. I. Electrochemical Dept.	214	C
Engineered Plastics, Inc.	230	T
Ets Neu	72	A E
Fairbanks Co., The	178	H
Faultless Caster Corp.	186	P
Fidelity Mach. Co., Inc.	73	L T
Fiske Bros. Refining Co. Lubriplate Div.	218	M
Forest Products Div. Olin Mathieson Chem. Corp.	53	P
Foster Machine Co.	147	T
Garland Mfg. Co.	190	R
Gaston County Dyeing Mach. Co.	188	E
Gastonia Roller Flyer & Spindle Co., Inc.	250	T
Gates Rubber Co.	175	Q
General Chemical Div., Allied Chem. & Dye Corp.	171	C
General Electric Co.	68-69	F Q
Lamp Div.	235	F
General Latex & Chem. Corp.	182	C
German-American Trade Promotion Office	230	N
Gessner Co., David	247	E
Goodrich Chemical Co., B. F.	28	C
Goodyear Tire & Rubber Co., Inc.	25	C
Gulf Oil Corp.	55	M
Harwood & Son, Geo. S.	200	T
Haskell-Dawes Mach. Co., Inc.	204	T
Herbert Products Inc.	234	T
Herr Mfg. Co.	54	T
Heyden Chemical Corp.	45	C
Hinde & Dauch	63	P
Hooker Electrochemical Co.	209	C
Hungerford & Terry, Inc.	228	B
Huyck & Sons, F. C. Noone Industrial Fabrics Div.	226	E
Hyatt Bearings Div. General Motors Corp.	163	O Q
Ideal Industries, Inc.	210	T
Industrial Rayon Corp.	58-59, 151	G
Industrie-Werke-Karlsruhe	233	E
Ingersoll-Rand Co.	10	H
Ives Co., Inc., L. T.	140	L

Jacobs Northern & Southern Div., E. H.	172	R
Johns-Manville	144	O
Johnson Corp., The	232	H
Jones Box Corp., Jesse	237	N
Keever Starch Co.	181	C
Kennedy Car Liner & Bag Co., Inc.	220	P
Kidde & Co., Inc., Walter	170	T
Kidde Mfg. Co., Inc.	225	L
Klauder-Weldon-Giles Mach. Co.	8	E
Kuljian Corp., The	234	M
Lane & Bros. Inc., W. T.	249	P
Laurel Soap Mfg. Co., Inc.	235	C
Lieberknecht, Inc., Karl	207	L
Link-Belt Co.	7	Q
Lockwood Greene Engineers, Inc.	24	N
Loper Co., Ralph E.	236	N
Lubriplate Div. Fiske Bros. Refining Co.	218	N
Luddell Mfg. Co.	64	E
Main & Sons, Inc., Robt. A.	236	T
Manhattan Rubber Div.	30	Q
Maple Flooring Manufacturers Assoc.	6	B
Marshall & Williams Corp.	237	E
Mathieson Chemicals Olin Mathieson Chem. Corp.	189	C
M-B Products Co.	248	H
Micro Switch Div.	74	F
Miller Corp., Harry	155	C
Minneapolis-Honeywell Reg. Co. Industrial Div.	76-77	K
Micro Switch Div.	74	F
Monsanto Chemical Co., Plastic Div.	203	C
Mount Hope Machinery Co.	57	E
National Aniline Div. Allied Chem. & Dye Corp.	17, 71	C
Naugatuck Chemical Div. U. S. Rubber Co.	65	C
New England Bobbin & Shuttle Co.	236	R
Noone Ind. Fabrics Div., of F. C. Huyck & Sons	226	E RT
Nopoco Chemical Co.	39	C
Oakite Products, Inc.	232	C
Olin Mathieson Chem. Corp. Forest Prods. Div.	53	P
Industrial Chemicals Div.	189	C
Ordnance Gauge Co.	202	L
Perfecting Service Co.	196	H
Pick Mfg. Co.	201	E
Powell Co., Wm.	136	H
Powell Valves	136	H
Procter & Gamble	50	C
Proctor & Schwartz Inc.	229	E R
Product Sales, Inc.	61	T
Raybestos-Manhattan, Inc. Manhattan Rubber Div.	30	Q
Refined Products Co.	2nd Cover	C
Reliance Elec. & Eng'g. Co.	49	F Q
Roberts Co.	9	T
Rohm & Haas Co.	177	C
Rose Co., Bennett	224	P
Rumford Chem. Works	195	C
Ryerson & Son Inc., J. T.	194	O
Saco-Lowell Shops	20, 142	T
Schlafhorst & Co., W.	11	RT
Schlumberger & Cie	36	T
Schweiter Co., Ltd.	44	T

for the best in CANVAS Steaming and Conditioning Baskets

LOOK FOR Lane



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- Light-weight, extra-strong, rust-resistant spring-steel frame with sturdy, hardwood bottom *double* riveted with non-rusting rivets.
- Rust-proof eyelets on all sides allow thorough efficient conditioning.
- Reinforced, rivet-fastened handles for safe moving.

STANDARD SIZES AVAILABLE

No.	Long	Wide	Deep
1½	18"	14"	12 "
2	22"	14"	14 "
2½	24"	15"	15 "
3	24"	18"	15½"
3½	24"	18"	18 "
4	30"	18"	16 "
4½	30"	18"	18½"
5	30"	18"	20½"
6	30"	20"	20½"
8	34"	22"	23 "
10	36"	24"	25 "
12	36"	26"	27½"

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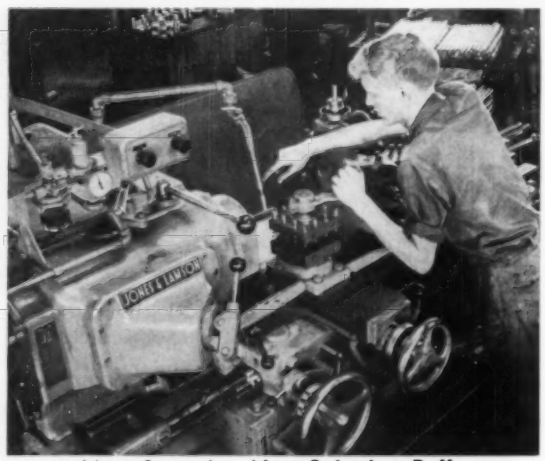

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SATISFACTION GUARANTEED

Scragg Ltd., Sydney & E.	48	T
Shore Instrument & Mfg. Co., Inc.	236	K
Sirrine Co., J. E.	3rd Cover	N
SKF Industries, Inc.	219	O...Q
Smith, Drum & Co.	179	E
Societe Alsacienne De Constructions Mecaniques	138	T
Solvay Process Div. Allied Chem. & Dye Corp.	158	C
Sonoco Products Co.	37	T
Southern Shuttles Div. Steele Heddle Mfg. Co.	46-47	R
Spaulding Fibre Co., Inc.	185	P...T
Square D Co.	161	F
Steel Heddle Mfg. Co.	46-47	R
Stein Hall	206	C
Stowe-Woodward, Inc.	15	E
Taylor Co., Halsey W.	198	N
Taylor Fibre Co.	67	O
Taylor Instrument Cos.	56	K
Taylor Stiles & Co.	196	T
Texas Co., The	4th Cover	M
Textile Machine Works	80	L
Tompkins Bros. Co.	204	L
Torrington Co., The	221	L
Turbo Machine Co.	5	L
U. S. Rubber Co. Mechanical Goods Div.	66	Q
Naugatuck Chem. Div.	65	C
U. S. Steel Co.	211	O
Universal Winding Co.	40-41, 156	T
Van Vlaanderen Mach. Co.	183	E
Veeder-Root, Inc.	51	K
Victor Ring Traveler Co.	32	T
WAK Industries	200	K
Warner & Swasey Co.	33	T
Western Felt Works	192	L...RT
West Point Foundry & Machine Co.	2	R
Whitin Machine Works	29	T
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"... Here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

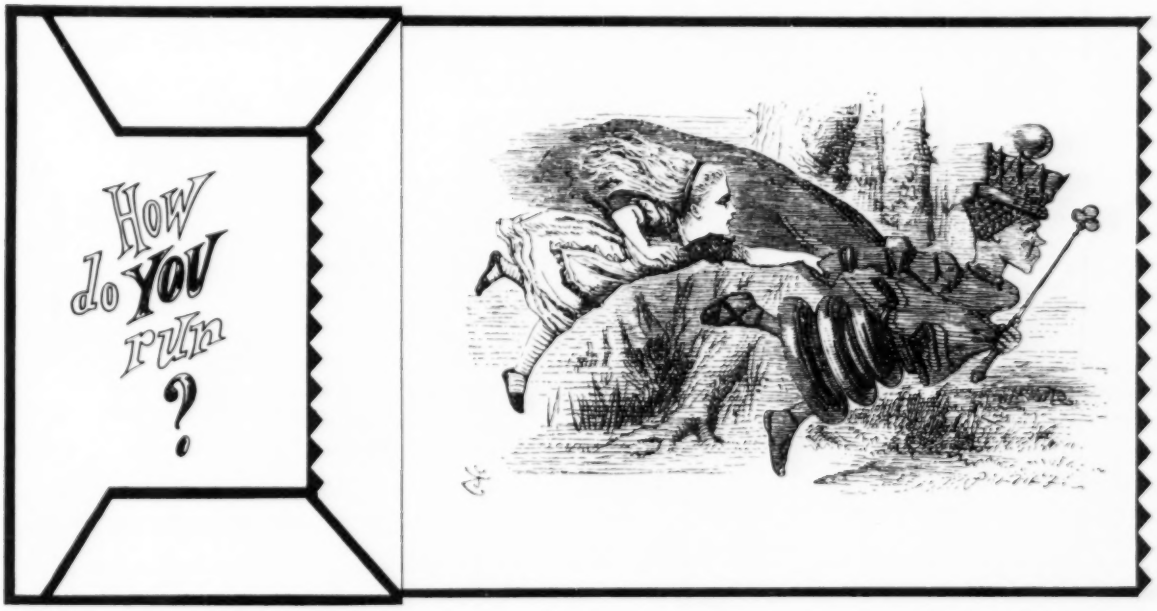
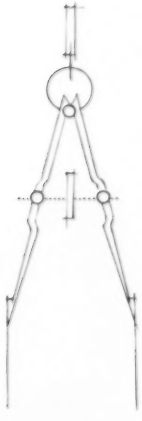


ILLUSTRATION BY JOHN TENNIEL FROM "THROUGH THE LOOKING-GLASS" BY LEWIS CARROLL



The Queen's advice was timely for travelers in Wonderland ... and for forward-looking American industry, as well. It takes all the running you can do to keep in step with the current course of business ... it requires a "plus" to grow.

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